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THE MULTIFACETED IMPACT OF INNOVATION:

FINANCIAL AND NON-FINANCIAL OUTCOMES

A Dissertation

by

DAVID HAL HENARD

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2000

Major Subject: Marketing

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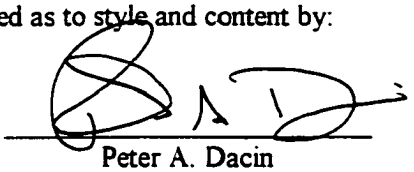

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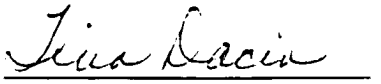
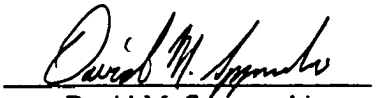
(Co-Chair of Committee)



M. Tina Dacin
(Member)



David M. Szymanski
(Co-Chair of Committee)

P. Rajan Varadarajan
(Head of Department)

P. Rajan Varadarajan
(Member)

December 2000

Major Subject: Marketing

ABSTRACT

The Multifaceted Impact of Innovation:

Financial and Non-Financial Outcomes. (December 2000)

David Hal Henard, B.A., University of Tennessee;

M.B.A., Emory University

Co-Chairs of Advisory Committee: Dr. Peter A. Dacin
Dr. David M. Szymanski

The purpose of this dissertation is to investigate the financial and non-financial outcomes of product innovation. The research focus and specific research objectives are guided by a review of the relevant literature that reveals: (i) a tremendous rise in attention to the determinants of new product performance, (ii) a managerial and researcher need to synthesize this growing literature base, (iii) a growing managerial interest in fostering a perceived corporate reputation for innovation and (iv) a dearth in scholarly investigation of the impact of a reputation for product innovation.

This dissertation attempts to close a research gap by conducting a meta-analysis of the empirical innovation literature. This analysis seeks to incorporate the explosive growth of research attention to the subject and provide scholars and managers with a single reference source that details the dominant determinants of marketplace performance and their relative impact. This dissertation further investigates the growing interest in corporate reputation by conducting a conceptual investigation of the impacts that a firm's reputation for product innovation (RPI) may have on constituencies of the firm. The Multifaceted Impact Model of a Reputation for Product

Innovation is developed using principles from signaling and institutional theories and associated empirical evidence. Five firm constituencies are investigated and the hypothesized effects on consumers and internal employees are empirically evaluated.

Results of the meta-analysis reveal the dominance of certain determinants of marketplace performance such as product advantage, product innovativeness and technological synergy. The impact of other determinants, specifically cross-functional integration, is called into question by the data. Among the noted outcomes of a firm's high RPI are that consumers who perceive a firm to have a high RPI tend to be more loyal to that firm, more excited by its product introductions and more tolerant of an occasional product failure by the relatively higher-RPI firm than less innovative competitors. Further, company constituency results indicate employee perceptions of a high firm RPI lead to heightened organizational commitment, excitement toward work tasks and increased performance expectations.

DEDICATION

This dissertation is dedicated to Cheryl H. Henard. For nearly two decades she has been an influential and integral part of my life. Without her assistance and guidance in countless matters, neither the doctoral degree nor this dissertation manuscript would be a reality. While the process of acquiring a doctoral education and completing a research dissertation is no small feat, it is perhaps equally hard on the family members who become nearly as involved as the student.

Through all of the high points and the low points of this four-year journey, Cheryl has sometimes led and sometimes followed, but she has always been unshakably by my side. Words cannot express my gratitude for her unwavering support and guidance. I therefore dedicate this dissertation to the mother of my three wonderful children, my closest advisor, my chief confidante, my wife and my best friend, Cheryl.

ACKNOWLEDGEMENTS

This dissertation is no different than many others in that it is a work that has benefited from the help, guidance and assistance of others. On a personal side, I would like to thank my three children, Michael, Robert and Blake. They have endured my many pleas for their quiet as I was doing my *homework*. While quiet and children are probably mutually exclusive terms, I owe each of them a heartfelt thank you for putting up with me these past few years and for understanding how important this has been to the family. I also acknowledge my parents, Jean and Don Henard, for their support and encouragement and for helping to shape within me, many years ago, the values of determination, dedication and hard work that have served me well in this quest. Thanks are extended to Mildred Henard for her support that allowed me to focus on completing the dissertation in a timelier manner. I would like to further thank Robert and Ernestene Herring for their support and hospitality – especially during the final push to complete the dissertation manuscript. Finally, to all those unnamed colleagues, friends and family members who supported and encouraged my decision to leave my business career and pursue my dream, I thank you for your thoughts, prayers and support.

Of course, there are a host of professional acknowledgements to be made as well. This research was funded in part by Procter and Gamble. Their funding dollars made the extensive empirical evaluation in this study possible and I am grateful for their support and interest in the project. Without the guidance of a dissertation committee, each dissertation would fall short of its potential and this one is no exception. I thank David Szymanski for his meta-analysis expertise in the financial outcomes portion of this manuscript and for his initial input into the non-financial conceptual model. I also thank Dr. Szymanski and the Center for Retailing Studies for arranging

the executive interviews that were used to augment the conceptual framework for non-financial outcomes.

Tina Dacin, despite being one of the hardest working and most traveled people in academe, has always been there for me when I needed her. Whether it was to guide me in a directed study, prep me for job interviews, comment on a paper or critique the dissertation manuscript, she has been more than generous with her time. Dr. Dacin has treated me as a colleague and has repeatedly acted in the best interests of my career offering guidance throughout the process. It is my hope that we collaborate on research initiatives in the future.

Rajan Varadarajan has been the recipient of more praise than I can offer here. As both a committee member and department head, Dr. Rajan has been instrumental in my doctoral education and has been invaluable in the construction of this dissertation manuscript. Given the multitude of responsibilities that Dr. Rajan has donned, my interactions with him have usually been brief. However, the best *hour-long* discussions that I have had throughout my years as a graduate student have been my *15-minute* conversations with Dr. Rajan. I have always found him to conduct himself in a professional, fair and courteous manner. I would also like to thank him for his role as department head. He has always been student-friendly and those of us who entered the doctoral program under his tenure have benefited greatly because of him.

Finally, there is one person without whom my dissertation in particular and my education in general would have been greatly diminished – Peter Dacin. Dr. Dacin has served as my Ph.D. Coordinator, my statistics professor, my chairperson and my advisor. More than the titles and professional relationships though, Peter has unknowingly served as my model of what a consummate professor should be and is a constant reminder of why I left industry for academics. His work ethic is beyond compare. He approaches his research with a competence and a yearning

that is refreshing to witness. Despite his research accomplishments, he always opens his door to doctoral students at all stages to lend a hand or to offer his frank manuscript critiques. The perpetual line of graduate and undergraduate students outside his office is a testament to his ardor and skill for teaching as well. His passion for his students has served as an inspiration for my personal teaching style. In sum, I consider Peter be the single most influential individual in my doctoral training and am fortunate to know him as a colleague and a friend.

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CHAPTER I

INTRODUCTION

The development and introduction of new products to the marketplace are vital activities if a firm is to achieve profitability and growth (Booz-Allen & Hamilton 1982). Each year, firms across the globe spend billions of dollars toward research and development activities designed to introduce products to the marketplace that will hopefully reward the innovating company with a competitive advantage. The drive for innovation and new product development is so pervasive in some firms that their corporate reputations are inexorably associated with product innovation. In addition to new product development expenditures, these firms annually spend large sums of money via advertising and other corporate communication to promote the public perception that they are innovative and that they regularly introduce innovative products to the marketplace.

The 3M corporation is perhaps the most widely acknowledged example of such an organization. From the ubiquitous Post-It Notes to the decorative film used to 'paint' public and corporate vehicles, 3M regularly introduces innovative products and actively promotes its reputation as a product innovator. For example, each 3M advertisement includes the tagline "3M Innovation." The firm is also aggressive in its encouragement of employees to spend a portion of their work time each week developing new product ideas. Additionally, 3M actively seeks out innovative product ideas from non-employees on their corporate web site. Such an orchestration of innovative activities indicates that 3M management obviously sees a tangible value in developing new products as well as in promoting the reputation that 3M is an innovative firm.

This dissertation follows the style and format of the *Journal of Marketing.*

The limited amount of research that looks at the differing impact that products and corporate reputations have upon attitudes (e.g., Brown and Dacin 1997; Wansink 1989) provides an initial indication that an individual's evaluation of specific product performance and overall firm reputation may be somewhat discrete. While views about a given product deal specifically with that product, views about the company and its reputation seem to center more broadly on the firm itself and involve a more intangible evaluation (Brown and Dacin 1997). It should be noted, however, that an individual's perception of a specific product might also hold certain intangible dimensions that may or may not impact their evaluation of the firm itself. Specific product and firm reputation views held by individuals are likely to be discrete, yet related entities (Aaker 1996; Dacin and Smith 1994). Thus, it may be operationally important for researchers and managers to understand not only the tangible determinants of successful new product performance, but also the less tangible ramifications of how the firm itself is viewed by others.

While individuals make judgments about the tangible (e.g., new product) and intangible (e.g., corporate reputation) facets of an organization, the resource-based theory of the firm (Amit and Schoemaker 1993; Barney 1986; 1991; Peteraf 1993; Prahalad and Hamel 1990; Wernerfelt 1984) proposes that firm's utilize their tangible and intangible resources in the pursuit of profits and competitive advantage. Given this relationship, the broad objectives of this dissertation are to assess the impact that individual product introductions have on firm financial performance (i.e., *financial outcomes*) and the impact that a firm's perceived reputation has on individual attitudes and behaviors (i.e., *non-financial outcomes*).

FINANCIAL OUTCOMES OF INNOVATION

Despite an overt managerial emphasis to promote new product development (NPD) as a means of achieving competitive advantage and the ever-increasing academic interest in the subject, a review of the relevant literature on new product financial outcomes presents readers with numerous focal areas and conflicting empirical results. For example, the correlation between certain new product development determinants and marketplace performance is reported as both positive and negative across extant research studies. This empirical disparity can impede researchers and managers from formulating effective NPD strategies (i.e., strategies leading to successful financial outcomes).

In the dissertation, the term *financial outcomes* is a generic label defined as the marketplace performance metrics commonly used to measure and evaluate the performance of new product introductions. Examples of financial outcomes include volume or financial sales figures, market share and ratio calculations such as return on investment (ROI) or return on assets (ROA). Financial outcome metrics are the metrics most readily available to managers. They are consequently the dominant factors utilized in developing and assessing corporate NPD strategic decisions. These same metrics are also the dominant focus of academic research (cf. Griffin and Page 1996; Montoya-Weiss and Calantone 1994).

The widespread use of financial outcomes by researchers and practitioners is understandable given their relative ease of conceptualization and measurement. The abundance of financial data from internal and secondary sources also contributes to the prolific use of financial outcomes as factors in theory and practice. Given the relatively dominant focus on financial

outcomes as a source of research evaluation and managerial prescription, a synthesis of the contemporary evidence regarding the drivers of new product performance is timely and relevant.

Since financial outcomes are ultimately the final measure of product success or failure, fostering a clearer understanding of which determinants are the relatively dominant predictors of financial performance is strategically beneficial to managers and directionally beneficial to researchers. With a recent increase in research attention to innovation issues[1], an updated accounting of which determinants are the dominant drivers of marketplace financial performance, their relationship (i.e., positive or negative) with performance and their degree of relative importance is warranted.

NON-FINANCIAL OUTCOMES OF INNOVATION

Despite the practical value that academic and practitioner attention to financial outcomes provides, researchers are increasingly critical of the dominance of this research approach (e.g., Montoya-Weiss and Calantone 1994; Wind and Mahajan 1997). Exploration of the direct-effect relationship between the determinants of new product development and the resulting financial outcomes is viewed by some researchers as too simplistic given the realities of the modern business environment (Wind and Mahajan 1997). Wind and Mahajan note that the past decade produced incredible changes in the business environment (e.g., technology, globalization, change in business practice) but that NPD research efforts have not adapted to the changes and continue to rely on dated methods of research. To advance the field of innovation research, they call for a "rethinking, reformulation and repositioning" of the field.

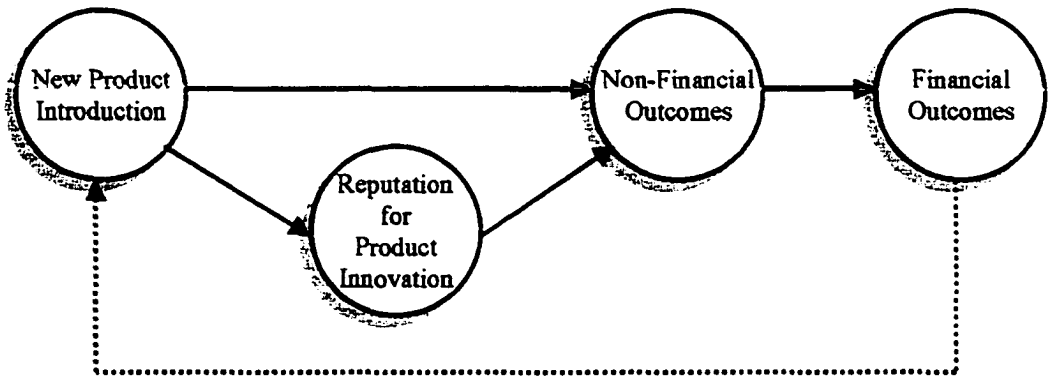
---

[1] The number of empirical studies focused on financial outcomes more than tripled from 1994 to 1999.

An examination of other, *non-financial outcomes* (i.e., relatively intangible facets of innovation) of NPD may serve as a step in the "rethinking" of how innovation research is conducted. The impact of a new product introduction, or cumulative introductions, on consumer behavior regarding the new product (or the innovating firm) is one example of a non-financial outcome. A non-financial outcome is defined as an outcome of new product development initiatives that is distinct from, yet ultimately has an impact on, new product financial performance. For example, it is reasonable to propose that the introduction of a new product does not *conceptually* have a direct-effect relationship with financial performance – although a statistical relationship will be found. New product sales or market share, for example, do not occur in isolation. Consumers must respond either favorably (e.g., with a purchase) or unfavorably to the product, which results in the observed financial performance of the item.

Likewise, competitive responses to the product introduction may impact the ultimate marketplace performance. Further, a history of successful NPD initiatives is likely to result in individual perceptions that the firm has a positive, or favorable, reputation for product innovation (e.g., 3M) and vice versa. Thus, the success or failure of a firm's NPD initiatives should logically have some impact on shaping public opinion of the firm over time and of the products that it produces. Figure 1.1 depicts an alternative conceptualization to the direct-effect relationship in that innovative activities (either single product introductions or a perceived firm reputation for product innovation) affect the perceptions of constituents of the firm (i.e., a non-financial outcome), whose subsequent behavior determines the financial outcome for the product. The ultimate success/failure in the marketplace will arguably affect both the amount of capital available for future NPD initiatives as well as constituent perceptions of the product and/or firm.

FIGURE 1.1
An Alternative Conceptualization to the Direct-Effects Framework of New Product Innovation



Non-financial outcomes can be conceptually modeled as the intangible effects of an individual product introduction and of a constituent-perceived firm reputation. These outcomes are operationalized in the dissertation as the effects of a corporate reputation for product innovation on various constituencies of the firm. These constituencies include consumers, employees and competitors, among other groups. Research suggests that a corporate reputation serves multiple strategic functions and that it positively correlates with firm profitability (Fombrun and Shanley 1990). Yet despite the apparent importance of the impact of corporate reputation on the constituencies of a firm, research has scarcely addressed certain facets of a firm's general reputation (e.g., a reputation for product innovation) or its impact on key constituencies such as consumers and employees (Fombrun and Shanley 1990; Shenkar and Yuchtman-Yaar 1997).

While a perceived corporate reputation for product innovation is something that many firms such as 3M apparently value, there is currently no conceptual development or measurement

of a corporate reputation for product innovation. The relative lack of extant NPD research on reputation and non-financial outcomes of product innovation – as compared to research on financial outcomes – may partially derive from the inherent difficulty associated with framing and measuring intangible effects. Thus, gaining an understanding of the underlying construct of such a reputation is beneficial to both researchers and managers in that a better understanding can lead to more efficient and effective actions.

JUSTIFICATION FOR THE RESEARCH

The general objectives of this dissertation are to:

- *Update and synthesize extant research on the drivers of new product financial outcomes.*
- *Explicate the non-financial outcomes that pursuing a reputation for product innovation has for companies.*

Understanding which factors are the relatively dominant drivers of financial performance and the broader non-financial effects of fostering a corporate reputation for product innovation will better equip managers to formulate tactical strategies that can lead to competitive advantage. Such knowledge is also beneficial to marketing scholars in that a better understanding of the overall dynamics of new product development initiatives can lead to more precise research inquiries that ultimately result in better managerial prescriptions.

The first objective of this dissertation research is to examine the various determinants that drive financial outcomes. Knowledge of which factors lead to successful marketplace performance and of their relative impact permits marketing managers to focus their efforts on manipulating those factors that have the greatest potential for financial success. This knowledge also helps them

to conserve resources by knowing which determinants are relatively less relevant to their competitive situation. Such knowledge benefits marketing researchers by highlighting which determinants are most worthy of investigation, which are relatively overlooked and which are empirically exhausted. An enhanced academic understanding of the drivers of financial performance increases the effectiveness and efficiency of researchers and managers alike.

A second objective of this dissertation research is to expand the horizons of the innovation literature. As indicated, the dominant direct-effect approach to innovation research ignores the potential role of less tangible (i.e., non-financial) outcomes in the NPD process and is therefore somewhat limited in its prescriptive ability. While the dominant research focus on financial outcomes provides many insights and is beneficial to business practice on a variety of levels, researchers have yet to fully investigate the more widespread dynamics of organizational innovation. Recent research (Brown and Dacin 1997; Wansink 1989) indicates that individuals evaluate firms and their product introductions on aspects other than simply product attributes. A corporate reputation is one aspect that impacts individual attitude and behavior (Fombrun and Shanley 1990; Hall 1992; Russo and Fouts 1997), yet the extent of its impact largely remains an issue.

Practitioner-based literature has also focused on the effects of corporate reputation. The success of *Fortune* magazine's annual survey of corporate reputation provides evidence that reputation building is perceived as valuable to many managers. Enhanced knowledge of the varied impacts of reputation can help researchers to address an array of potential outcomes associated with a perceived corporate reputation. Academic explication of the outcomes of a perceived reputation consequently aids marketing managers in assessing an appropriate strategic course of

action. In the following sections, justification for both the financial and non-financial outcomes investigations is discussed further.

Justification for the Financial Outcomes Study

Investigation of the financial outcomes of NPD initiatives has a long history in the innovation literature. Rothwell et al. (1974) were among the first scholars to investigate the determinants of marketplace performance in their SAPPHO studies. The SAPPHO studies find five factors that discriminate between financial success and failure: (i) an understanding of customer needs, (ii) a focus on marketing activities, (iii) developmental efficiency, (iv) external activity coordination and (v) managerial involvement. Cooper's NewProd studies (e.g., Cooper 1979, 1980, 1992) further develop thought on the subject and identify three broad, dominant factors of innovation success rates: (i) product uniqueness/superiority, (ii) firm market knowledge/superiority and (iii) firm technical and production synergy. The Stanford Innovation Project (Maidique and Zirger 1984) likewise identifies three factors that contribute to the success or failure of an innovation: (i) environmental variables, (ii) firm skills and resources and (iii) products and product strategy.

Understanding which determinants are relatively more important than others is currently unanswered in the literature. Further, discrepancies in both theoretical viewpoints and empirical findings for certain determinants of financial performance exist. Therefore, one purpose of this dissertation is to address these discrepancies and provide managers and researchers with a comprehensive analysis of the NPD performance literature. The need for a *single* study that provides research clarity and practical direction regarding the drivers of new product performance exists. While good NPD reviews can be found that are predominantly qualitative (e.g., Booz-Allen

& Hamilton 1982; Cooper 1980) or quantitative (e.g., Montoya-Weiss and Calantone 1994) in nature, the intent here is to provide a synthesis of the evidence on the subject.

The extant empirical literature on the drivers of financial performance is dominated by a bivariate, direct-effect focus of investigation. The relative lack of multivariate empirical examination prevents researchers and managers from fully understanding the combined effectiveness of each determinant or driver. Furthermore, potential covariates of the determinant-performance relationship that may lead to the disparate empirical findings and contradictory prescriptions found in the literature are relatively unexplored despite appeals to address both of these research deficiencies (e.g., Montoya-Weiss and Calantone 1994; Wind and Mahajan 1997). Thus, a further intention of this dissertation is to conduct a multivariate assessment of the innovation literature and explore potential factors that may account for some of the research discrepancies.

The disparate empirical findings in the literature accent the need for their synthesis. This synthesis of the empirical evidence is necessary in order to advance understanding of what actually drives new product financial performance. A more detailed review of the literature, for example, reveals that the direction, statistical significance and magnitude of the marketplace performance effects for some determinants vary across studies and their respective models. These conflicting findings complicate efforts among managers and researchers to develop a clearer and more comprehensive understanding of why some new products succeed and others fail. In summary, the *financial outcomes* section of the dissertation focuses on the following research questions:

- *What are the drivers of financial performance in the marketplace?*

- *Are the respective relationships between the drivers and financial performance positive or negative?*
- *What is the relative magnitude of each determinant of financial performance?*
- *What covariate factors contribute to the variance in extant empirical estimates?*

Justification for the Non-Financial Outcomes Study

To be successful, firms must effectively interact with a number of constituencies including customers, competitors, employees and stakeholders (Dowling 1986; Fombrun 1996; Freeman 1984; Weigelt and Camerer 1988). Thus, it is plausible that both an individual innovative product and a perceived innovative reputation will impact these constituencies and consequently influence a product's ultimate market performance. A perusal of corporate communications (e.g., advertisements, annual reports, press releases) reveals an apparently widespread interest on the part of managers to convince their various constituencies that innovation is a prominent firm component. For example, Michelin signals its innovative roots by adding the tagline "100 Years of Innovation" to many of its ads while International Paper ads tout its results-driven innovative new product developments by highlighting its responsiveness to customer's product dilemmas. Other anecdotal evidence indicates that innovative reputations are a valued firm asset. As previously noted, each year *Fortune* magazine ranks America's most admired companies. Listed among the eight reputation criteria for evaluation is firm innovativeness.

This evidence suggests that the business community may view innovation in broader, non-financial terms than those seen in much of the existing innovation research. In several instances, a great deal of corporate time, energy and money are directed at convincing various constituencies that a given firm is innovative. A noteworthy example is the practice of automobile manufacturers'

development of concept cars. Chrysler Corporation, for instance, developed and promoted the Viper and Prowler autos with limited distribution and limited initial expectations of product-specific profit. A tangential objective of the concept car, however, is the promotion of a corporate reputation for innovation. Recent Chrysler Corporation television advertisements attempt to leverage the uniqueness of the Viper to produce a halo effect across their entire line of products by featuring the automobile in combination with other company models.

Corporations promote a reputation in an attempt to *influence* their constituencies (Dowling 1986; Freeman 1984). Research indicates that developing a corporate reputation and actively promoting it is a modern business necessity (Gray and Balmer 1998); thus, firm reputation may serve as a strategic business tool. Among other effects, a corporate reputation impacts consumer beliefs and attitudes regarding a firm (Brown and Dacin 1997; Rao, Qu, and Ruekert 1999), signals strategic intensions to competitors (Kreps and Wilson 1982; Milgrom and Roberts 1982) and influences employee organizational identification (Dutton, Dukerich, and Harquail 1994). Yet despite the potential influence that a firm reputation can have upon its constituencies, academic investigation of many of its effects is noticeably absent. As such, the consequences of a perceived corporate reputation "are worthy of considerable academic attention" (Fombrun and Shanley 1990).

One area of research dearth lies in the investigation of a corporate reputation for product innovation (RPI). Understanding how an innovative reputation impacts various firm constituencies (i.e., non-financial outcomes) allows scholars to more accurately design research initiatives that lead to effective managerial prescriptions. Given the evidence that some senior managers covet a corporate reputation for product innovation, an academic investigation of the varying reputational impacts on the constituencies of a firm is further warranted. While one finds evidence among

practitioner actions that promoting an innovative corporate reputation is deemed strategically valuable, scholarly investigation of the outcomes of fostering a reputation for product innovation is lacking. The lack of definition for a RPI construct, coupled with an absence of research centering on the outcomes of such a reputation, creates a gap in our knowledge of corporate reputation and its effects. Thus, explication of the RPI construct and its outcomes is of strategic benefit to researchers and managers. In summary, the *non-financial outcomes* section of the dissertation focuses on the following research questions:

- *What is a corporate reputation for product innovation (RPI) and how is it measured?*
- *What are the non-financial (e.g., consumers, competitors, suppliers) effects of signaling a corporate reputation for product innovation?*

EXPECTED CONTRIBUTIONS OF THE RESEARCH

This research has the potential to make insightful research and managerial contributions. It proposes to contribute to the literature by synthesizing a growing base of financial outcomes research and by exploring the practically relevant yet under-investigated non-financial outcomes of innovation. The financial outcomes section of the dissertation provides a rigorous empirical alternative to a narrative discussion of the rapidly expanding innovation and new product development research (Wolf 1986). One contribution of this synthetic analysis of the empirical evidence is that it provides a *single* reference point for scholars and managers interested in understanding the drivers of new product performance. The multivariate examination of the empirical literature provides readers with the first study addressing the *relative* degree of strength among the determinants.

By synthesizing the empirical innovation literature using a meta-analysis, the dissertation serves to capture the magnitude and direction of each NPD determinant's relationship with ultimate marketplace performance. This knowledge provides scholars and managers with an understanding of which determinants clearly have positive or negative effects on financial performance and which exhibit mixed results. The financial outcomes analysis also indicates emerging and neglected areas of innovation research. This section of the dissertation serves to solidify the existing base of innovation knowledge, highlight potential avenues of research investigation and provide managers with a tool to improve the efficiency and effectiveness of their strategic decision-making process.

The non-financial outcomes section of the dissertation addresses a growing request by researchers to rethink how to approach the field of innovation and to move beyond the direct-effect focus that dominates the literature (e.g., Crawford 1994; Montoya-Weiss and Calantone 1994; Kuczmarski 1994; Wind and Mahajan 1997). By undertaking an investigation of the impact that a perceived corporate reputation for product innovation has on constituencies of the firm, this dissertation develops an initial understanding of the broader, less tangible effects of NPD initiatives. This research introduces the reputation for product innovation (RPI) construct and contributes to the reputation literature by addressing calls to expand research knowledge of the action-specific aspects of corporate reputation and its impact on key constituencies of the firm (e.g., Fombrun and Shanley 1990; Shenkar and Yuchtman-Yaar 1997). The development of the RPI construct – as distinct from a *general* corporate reputation – introduces and tests an action-specific facet of firm reputation that is of contemporary practical importance yet is currently uninvestigated in the literature.

Empirical examination of the influence of a corporate reputation on a firm's constituencies provides an evaluation of existing theories within the innovation context. Principles from signaling (Spence 1973) and institutional (Selznick 1957) theories are combined with associated empirical evidence to develop a conceptual model that investigates constituency-specific effects resulting from a perceived firm RPI. The non-financial outcomes section of the dissertation further proposes to contribute to the innovation field by constructing a guiding model for future research initiatives and by developing hypotheses for use when testing facets of the model. Finally, the non-financial outcomes section of the dissertation strives for managerial relevance by evaluating concepts and relationships that introduce certain intangible aspects associated with new product development. The introduction of these aspects has the potential to assist managers in more accurately framing their strategic options and decision criteria, thus leading to more efficient and effective actions and eventually to positive financial outcomes.

ORGANIZATION OF THE DISSERTATION

This dissertation proceeds by presenting general conceptual frameworks for both financial and non-financial outcomes in Chapter II. These general frameworks serve to guide subsequent, more detailed investigations in future chapters. The dissertation is organized by the respective outcomes with an examination of financial outcomes preceding that of non-financial outcomes. Conceptual development and hypotheses for the financial outcomes section of the dissertation are presented in Chapter III with an empirical examination of the hypotheses detailed in Chapter IV. Chapter V presents the conceptual development and hypotheses for the non-financial outcomes section of the dissertation with empirical investigation of key constituencies detailed in Chapter

VI. The dissertation concludes with a general summary of both the financial and non-financial findings in Chapter VII.

CHAPTER II

GENERAL CONCEPTUAL BACKGROUND FOR FINANCIAL AND NON-FINANCIAL OUTCOMES

This chapter presents the general conceptual frameworks for both financial and non-financial outcomes of innovation. These discussions serve to broadly set the stage for more detailed conceptual and empirical discussions regarding each outcome in subsequent chapters.

COMPETITIVE ADVANTAGE AND FIRM RESOURCES

The primary objective of any business organization, if it is to prosper over an extended timeframe, is to achieve some measure of competitive advantage in the marketplace (Porter 1985). More precisely, a sustainable competitive advantage (SCA, Coyne 1986; Reed and DeFillippi 1990), capable of returning long-term profits to the firm, is a higher order organizational goal. While a competitive advantage in the marketplace is beneficial, a *sustainable* advantage implies that the competitive gap is likely to persist for sometime; thus, prolonging the economic payoff to firms that invest in developing a SCA. For a corporate advantage to be classified as sustainable, it must meet three criteria: (i) there is a perceived consistent difference in important attributes (i.e., versus competition); (ii) this difference is a direct consequence of a capability gap between the firm and competition; and (iii) both the perceived difference and the gap can be expected to endure over time (Coyne 1986).

Resource-Based View of the Firm

Firms use their available resources to pursue a competitive advantage. The resource-based view of the firm (Amit and Schoemaker 1993; Barney 1986, 1991; Peteraf 1993; Prahalad

and Hamel 1990; Wernerfelt 1984) views these resources as potential sources of competitive differentiation. Firm resources are defined as being either tangible (e.g., products, equipment, financial capital) or intangible (e.g., reputation, tacit employee skills, brand names) and both can lead to competitive advantage. Recent research in the area of consumer behavior (Brown and Dacin 1997; Wansink 1989) indicates that individuals, likewise, form attitudes about firms based upon both the company's tangible product offerings and intangible firm reputations. Just as firms can draw upon their tangible and intangible resources in an attempt to achieve competitive advantage, so too do individuals evaluate firms on both of these resource dimensions when forming judgments about the firm. Thus, it is important for researchers to gain a strong understanding of the dynamics surrounding both tangible and intangible resources. By gaining a clearer understanding of these dual dynamics, researchers will be better equipped to provide managers with effective and efficient prescriptions for managing their tangible and intangible resources toward the end goals of profitability and competitive advantage.

Academic investigation of tangible resources dominates the literature due, in part, to the relative ease in capturing this type of information (e.g., financial outcomes). The innovation literature is no exception with a great deal of research focused on tangible new product development initiatives. Fostering a better understanding of how the tangible resources of a firm (e.g., a new product) relate to tangible financial outcomes (e.g., sales, market share) and competitive advantage is of obvious importance to corporations. Recently, the innovation literature has experienced a dramatic increase in scholarly interest in the financial outcomes of innovation with the number of empirical studies more than tripling in the past three years. Understanding which determinants or drivers of these outcomes will best lead to firm profitability helps researchers and managers to focus their efforts on the key resources leading to sustainable

competitive advantage. Hence, one motivation for this dissertation research is to update and synthesize this growing body of research on the drivers of new product financial outcomes.

In addition to the impact of tangible firm resources on marketplace performance, a central element of the resource-based view of the firm is the proposition that intangible resources, such as a corporate reputation, significantly contribute to the performance differences among firms and lead to SCA (Rao 1994). Intangible resources hold the potential to deliver sustainable competitive advantage if they possess four classical attributes. They must be: (i) valuable; (ii) rare; (iii) imperfectly imitable; and (iv) non-substitutable (Amit and Schoemaker 1993; Barney 1991; Peteraf 1993). Rao (1994) proposes that a corporate reputation is a key intangible resource capable of providing a firm with a SCA. Contemporary business examples support Rao's view and indicate that a corporate reputation for product innovation is a coveted intangible firm resource. 3M, Michelin, and International Paper are among the most recent examples of firms actively pursuing an image as a product innovator. One reason may be that a reputation can be more enduring and subject to less competitive erosion than a more tangible product (Barney 1991; Reed and DeFillippi 1990).

Reputations are apparently perceived as *valuable* (at least at certain firms) to managers as evidenced by the degree of public expenditure by certain firms to promote them. Empirical validation of this assumption, however, is currently lacking. Firm reputations can also be viewed as *rare* in that they are not a commodity that can be readily purchased in the marketplace (Barney 1991). Further, reputations are both *imperfectly imitable* and *non-substitutable* in that a reputation develops over time after some manner of historical consistency (Avlonitis, Kouremenos, and Tzokas 1994; Fombrun 1996; Weigelt and Camerer 1988) and is formed by a

set of circumstances unique to that firm. As such, a firm's reputation is intrinsically formed within its unique social context and is thus, non-transferable (Berger and Luckmann 1966).

While the view of corporate reputation as an intangible resource leading to SCA is purported among both researchers (e.g., Fombrun and Shanley 1990; Rao 1994; Weigelt and Camerer 1988) and managers (Aaker 1989; Hall 1993) there is relatively little empirical evidence to support such a belief and many of the outcomes of reputation remain under-investigated (Fombrun and Shanley 1990). Contrary to the rationale supporting the dominance of research on tangible firm assets, less tangible resources (e.g., reputation) are relatively more difficult to model and operationalize due to their inherent intangible nature. This may account for some of the dearth of research in this area. Yet, given the depiction of corporate reputation as a critical intangible antecedent to financial performance (Fombrun and Shanley 1990; Hall 1992, 1993; Itami 1987), a further motivation for this dissertation research is to investigate the outcomes that a perceived corporate reputation for product innovation has for companies.

The following sections of this chapter detail the general conceptual background for the factors of interest in this research. According to the resource-based view of the firm (Barney 1991), firms compete via the use of their tangible and intangible resources. As such, an improved understanding of the financial and non-financial outcomes associated with corporate innovation may lend insight into how firms can compete more effectively for competitive advantage. A general background for the financial outcomes of innovation is followed by a discourse on the non-financial outcomes.

GENERAL BACKGROUND FOR FINANCIAL OUTCOMES OF INNOVATION

Previous research on the determinants of new product performance served as the initial guide for developing a complete set of antecedent factors of a firm's financial outcomes of innovation. For example, Cooper (1980) posited 18 determinants of product performance and organized them into three broad categories: product-related factors, market-related factors and technical and production-related factors. Cooper (1984a) reduced 66 initial factors to 19 and grouped them into four categories while Cooper and Kleinschmidt (1987) explored ten determinants of product success finding statistical support for nine of them. In the most recent review of antecedents to new product performance, Montoya-Weiss and Calantone (1994) organized 18 determinant factors into four categories: firm strategy-related factors, internal process-related factors, market environment-related factors and firm organization-related factors. However, the fact that additional factors have been studied in sufficient numbers since their meta-analysis of the literature implies that a slightly more contemporary classification schema may be called for.

In reviewing the literature, a calculated effort was made to capture the determinants of performance at a micro level and to then aggregate them into more managerially actionable macro categories. Coding of the determinant factors was accomplished using the existing schemes as a guide while remaining cognizant of idiosyncratic and emerging factors that presented themselves in the course of the literature review. An extensive review of the literature (see Chapter IV, Method for Identifying Empirical Studies for a comprehensive discussion of study identification efforts) revealed that at least 24 different determinants of new product performance were identified in the literature. The classification schema used in this research is comprised of four categories.

Using a procedure outlined in Chapter IV, the final categorization of new product performance determinants was developed and is detailed in Table 2.1.

Some of the determinants listed in Table 2.1 are arguably classifiable as a financial outcome as well as a determinant. For example, a 'product meeting consumer needs' could realistically be modeled as an outcome of a product design initiative or as a consequence of heightened consumer input into the NPD process. While acknowledging this possibility, the determinants noted in Table 2.1 are not defined as financial outcomes within the domain of this dissertation. For one, the definition offered for financial outcomes does not correspond with those of the 24 determinants. Further, the categorization of these determinants as antecedents to financial outcomes is consistent with a host of extant literature depicting them as such (e.g., Cooper 1980, 1984a; Cooper and Kleinschmidt 1987; Montoya-Weiss and Calantone 1994).

Following Table 2.1 is a brief definitional overview of each macro category of determinant factors and serves as a complement to the table. Subsequent discussion of new product determinants flows from these categorizations with more detailed analysis of each determinant following in Chapter III. The use of the word "product" in the discussion encompasses both tangible and intangible (e.g., services) products unless specifically noted otherwise.

TABLE 2.1
The Dominant Determinants of New Product Performance

Determinant	Definition
Product Characteristics	
Product Advantage	Superiority and/or differentiation over competitive offerings
Product Meets Customer Needs	Product satisfies perceived desires/needs of the customer
Product Price	Perceived price-performance congruency (i.e., value)
Product Technological Sophistication	Degree of technological sophistication (i.e., high tech, low tech)
Product Innovativeness	Degree of newness/innovativeness (e.g., radical, incremental)
Firm Strategy Characteristics	
Marketing Synergy	Congruency between firm marketing skills and marketing skills needed to effectively execute an NPD initiative
Technological Synergy	Congruency between firm technological skills and technological skills needed to effectively execute an NPD initiative
Order-of-Entry	Timing of marketplace entry with a product/service
Dedicated Human Resources	Focused commitment of personnel resources to an NPD initiative
Dedicated R&D Resources	Focused commitment of R&D resources to an NPD initiative
Firm Process Characteristics	
Structured Approach	Employment of formalized product development procedures
Pre-development Task Proficiency	Proficiency with which a firm executes the pre-launch activities (e.g., idea geration and screening, market research, financial analyses)
Marketing Task Proficiency	Proficiency with which a firm conducts its marketing activities
Technological Proficiency	Proficiency of a firm's use of technology in an NPD initiative
Launch Proficiency	Proficiency with which a firm actually launches the product/service
Reduced Cycle Time	Reduction in the concept to introduction timeline (i.e., time to market)
Market Orientation	Degree of firm orientation to its internal, competitor and customer environments
Customer Input	Customer specifications are incorporated into an NPD initiative
Cross-functional Integration	Degree of multiple department participation in an NPD initiative
Cross-functional Communication	Level of communication between departments in an NPD initiative
Senior Management Support	Degree of senior management support for an NPD initiative
Marketplace Characteristics	
Likelihood of Competitive Response	Likelihood of competitive reaction to a firm's NPD introduction
Competitive Response Intensity	Degree of competitive response to an NPD introduction
Market Potential	Anticipated growth in customers/customer demand in the marketplace

Product Characteristics

This category refers to those variables that pertain specifically to the product being introduced to the marketplace. Such factors as the quality, price and innovativeness of the product fall into this categorization as do management perceptions of how well the product meets the needs of consumers. The perceived advantages of a product over rival offerings are central to this categorization. However, the determination of product characteristics in the literature is overwhelmingly captured from the viewpoint of the firm as opposed to that from the customer's viewpoint and should be noted when interpreting the results.

Perhaps the dominant facet of product characteristics investigated by academic researchers is the impact of product advantage on marketplace performance. Product advantage, defined as the perceived relative superiority of one product over another, has an understandable impact on market performance (Cooper and Kleinschmidt 1987). Individual aspects of that advantage (e.g., better price, higher quality) also exhibit a relationship with marketplace success (Cooper and Kleinschmidt 1993; de Brentani 1989). Tied to product advantage is the intuitive concept that consumers are more likely to value products designed to meet their needs. If the consumer perception is that a product meets their needs and/or is superior to competitive product offerings, it is more likely that consumers will make an initial purchase and strongly consider repurchase if product performance exceeds expectations (Cooper 1984a; Oliver 1980). Further, the attribute-specific components of a product (e.g., style, technological level, uniqueness) are also likely to have an effect on the ultimate marketplace performance of the product. A superior product design is integral to both product advantage and financial outcomes (Bruce and Whitehead 1988). Given this evidence, one can generally propose a positive relationship between the characteristics of a new product and its performance.

Strategy Characteristics

Strategy characteristics comprise the strategic actions of a firm such as the advertising and promotional support of a product, use of firm resources in the NPD initiative, market introduction timing decisions and plans to counter competitive responses. The question of synergy, or how well firm resources match the NPD task requirement, is also a strategic characteristic. In essence, any activity that involves a decision on resource allocation to a given development project, product design, or strategic dealings with competition or markets falls under this category.

The synergy construct in the literature is generally modeled as examinations of either marketing or technological synergy and their respective impact on financial outcomes. Broadly, research results centering on the effect of synergy are disparate. There is some support for the classical approach that a synergy between the strengths of a firm and the product development task requirements will lead to marketplace success (e.g., Cooper and Kleinschmidt 1987). More recently, others advance the notion that a 'thinking outside the box' approach is necessary for successful performance and cite the need to break free from the safety of current norms and synergies (e.g., Atuahene-Gima 1996). Central to the issue of strategic new product development is the question of market entry timing. A host of marketing literature suggests that market order-of-entry, while certainly related to financial outcomes, may have a contextual effect. While some literature supports the superiority of being first to market (e.g., Lambkin 1988; Robinson and Fornell 1985), other research questions this purported advantage (e.g., Golder and Tellis 1993). Szymanski, Troy, and Bharadwaj (1995) acknowledge an entry-performance relationship and further forward some potential moderating factors of the relationship.

A third strategic characteristic is the decision to allocate firm resources to a new product initiative. Intuitively, the greater the resources dedicated to a NPD initiative, the greater the

expected marketplace performance. The rationale is that dedicating resources – either human or financial – to an initiative, as opposed to partially committing them, will result in superior performance. This view finds support in the literature with the view that dedicated resources positively influence product success (Maidique 1980; Mishra, Kim, and Lee 1996). Based upon existing research, one can broadly conclude that a firm's NPD strategic actions and decisions are positively related to its new product performance.

Process Characteristics

Whereas strategy-related characteristics pertain mostly to the *planning* aspects of a NPD initiative, process characteristics relate to the *executional* aspects of an initiative. This category includes how well or poorly internal departments interact during the NPD process as well as the number and proficiency of steps executed by a firm during the development and introduction of a new offering. It also includes other factors such as the degree of senior management support for an initiative as well as the degree of firm market orientation. In essence, this category aggregates all determinants of performance pertaining to how the initiative is accomplished.

Central to this highly investigated categorization of financial performance determinants is the investigation of the impact that explicitly structuring a firm's NPD process has on financial outcomes. Booz-Allen & Hamilton (1982) posit that a structured *stage gate* approach, where the product development and introduction process is conducted via specifically defined steps, is the superior approach. While many researchers hold this view (e.g., Cooper and Kleinschmidt 1986; Hise, O'Neal, McNeal, and Parasuraman 1989), others (Wind and Mahajan 1997) criticize the stage gate approach as inappropriate in certain competitive environments. Whether a firm adopts the traditional linear NPD process approach advocated by Booz-Allen & Hamilton (1982) or a more interactive and dynamic approach, reducing the cycle time from *ideation* (i.e., product idea

generation) to introduction is generally thought to positively impact marketplace performance. The overwhelming evidence in the new product development literature is that reducing cycle time, in general, positively correlates with financial performance. While cycle time effects may arguably be contextual, there is sufficient evidence to propose a relationship between cycle time and financial outcomes.

Likewise, firms that adopt a greater market orientation (cf. Kohli and Jaworski 1990; Narver and Slater 1990) generally have greater market performance relative to firms that are less market oriented (Atuahene-Gima 1995; Cooper 1984a; Li and Calantone 1998). These studies suggest that the strength of a firm's customer, competitor and internal orientation may positively impact its marketplace performance. Cooper (1984a) advocates that firms pursue a market orientation by focusing on the needs of the marketplace while simultaneously seeking new product ideas from market constituents. Each of the previous topics heightens the need for multiple people and functions within an organization to effectively interact. Some scholars believe that cross-functional integration, or the interaction of multiple departments within a firm, is a necessity for positive new product financial outcomes (Wind and Mahajan 1997). Research-to-date suggests that the successful integration of multiple departments working on a NPD initiative leads to positive marketplace results (Gupta, Raj, and Wilemon 1986; Souder 1981). While inter-departmental friction exists despite the best efforts to contain it (Souder 1988), cross-functional interaction is conducive to a corporate atmosphere that leads to innovative products (Olson, Walker, and Ruekert 1995). Given the above discussion, it is reasonable to propose that a firm's NPD process activities are directly and positively related to its new product performance.

Marketplace Characteristics

Factors affiliated with this category refer partially to variables associated with actions by competitor firms and comprise one key aspect of the external environment. These factors include both the actions and intensity of those actions taken by competitive firms either in response to or anticipation of a new product introduction. Marketplace dynamics, such as the degree of environmental turbulence, also fall into this category. Another aspect of a firm's external environment is its current or future customer base. Hence, this category incorporates market potential as well. While other facets of the marketplace were uncovered in the literature search (e.g., degree of customer satisfaction with competing products), they were not incorporated into the schema due to very small numbers and questions regarding their generalizability.

Early research of the impact that competitive response to a new product introduction ironically indicated that competitive reaction had no appreciable effect on a product's marketplace performance (Cooper 1979). Yet, Song and Parry (1996) find that there is a relationship between competitive response and financial outcomes, albeit relatively small. Other academic inquiries (e.g., Parry and Song 1994) point to competitive activity as having a negative effect on financial outcomes while still others (e.g., Li and Calantone 1998) indicate that competitive reaction may actually improve market performance. The logic behind the negative predictions is understandably in that the presence of any competitive activity should ultimately reduce profits by some degree. Counter to this is the proposition that competition enhances marketplace performance – presumably via increased competitive pressure to produce enhanced and market-oriented products.

Finally, the size of an existing or a potential market (i.e., the number of projected consumers for the product or class) should intuitively impact ultimate product performance as well. The greater the existing consumer base for a product, the greater the opportunities for

enhancing financial outcomes. This logical supposition finds support in the literature. Rothwell et al. (1974) note that understanding consumer needs, and thus expanding the market potential of a product, is an essential determinant of successful financial performance. Mishra et al. (1996) concur that market potential is related to financial outcomes. Based upon this discussion, one can propose a general relationship between a firm's marketplace environment and its new product performance. Discussions throughout this section of the study indicate that the determinant's empirical relationships across studies and within the four categories will likely vary as to size, sign and strength but that each of the four broad categories of determinants is related to financial outcomes. For example, while the relationship between product innovativeness and performance is documented in the literature, both positive and negative estimates of the correlation are found.

While knowledge of the drivers of financial outcomes of innovation is beneficial to researchers and managers, it only provides us with one component of the broader resource-based impact of firm innovation. As such, a discussion of the general background for the non-financial outcomes of innovation follows. Gaining a better understanding of both the financial and non-financial outcomes of innovation provides researchers and managers with better information on which to formulate effective strategy.

GENERAL BACKGROUND FOR NON-FINANCIAL OUTCOMES OF INNOVATION

The conceptual discussion now turns to an initial examination of the proposed effects that a firm's reputation may have upon non-financial outcomes of product innovation.

Introduction

The general rationale for developing and promoting an intangible resource such as a corporate reputation is that a reputation can (i) create a corporate identity, (ii) influence various

constituencies, (iii) signal a strategic direction and (iv) promote shared values, among other things (Dowling 1986; Fombrun 1996; Fombrun and Shanley 1990). Recent years have witnessed increasing managerial and scholarly interest in innovation research. Yet, despite criticisms of a lack of both methodological rigor (Montoya-Weiss and Calantone 1994) and theoretical rigor (Wind and Mahajan 1997), much of the empirical research focus continues to examine the simple, direct-effect relationships between determinants of marketplace performance and their ultimate financial outcomes while building evidence hints that the impact of innovation on performance is perhaps a richer set of relationships than extant research suggests (Brown and Dacin 1997; Fombrun 1996; Fombrun and Shanley 1990; Hall 1992, 1993; Rao 1994; Weigelt and Camerer 1988).

Wind and Mahajan (1997) note that in order for the field of innovation research to progress beyond its current marginal advances, bold moves requiring a "rethinking, reformulation and repositioning of the field" are necessary. The motivation for investigating the non-financial outcomes of innovation, therefore, is to (i) delineate other possible (i.e., non- financial) outcomes of innovation, (ii) construct a guiding model for future research efforts and (iii) develop hypotheses for use when eventually testing the proposed model. This discussion proceeds with a general analysis of proposed non-financial relationships.

Corporate Reputation

In a recent roundtable interview of corporate CEOs, the executives suggested that a corporate reputation is an intangible asset that is distinct from brand image and serves as a capital account of stored trust (Donlon 1998). Senior managers also rank corporate reputation as the key intangible firm resource to achieving sustainable competitive advantage (Aaker 1989; Hall 1993). There are several conceptualizations of corporate reputation. Various similar or synonymous

terms describe the relative standing of organizations: 'prestige' is a common term in sociological research (Leister and MacLachlan 1975; Perrow 1961; Sharp, Shin, and Smith 1982), 'image' is used in marketing (Barich and Kotler 1991; Bolger 1959; Cohen 1967; Lindquist 1975; Winters 1986), 'reputation' in economics and management (Fombrun and Shanley 1990; Kreps and Wilson 1982; Rao 1994; Weigelt and Camerer 1988; Wilson 1985) and 'goodwill' in accounting literature (Catlett and Olson 1968; Kieso and Weygandt 1983; Vergin and Qoronfleh 1998), for example. Spence (1973, 1974) and Fombrun and Shanley (1990) interpret corporate reputation as a competitive process by which individual firms signal their key characteristics to their constituents. Similarly, Shenkar and Yuchtman-Yaar (1997) view reputation as an organizations' ranking on relevant criteria, which forms the relative position of that organization in the eyes of its constituencies. A synthesis of the various definitions of organizational reputation found in the literature imparts three basic tenets of a corporate reputation:

(i) Reputation develops over time through repeated interactions.

(ii) Reputation is multifaceted.

(iii) Different constituencies will have different perceptions of a firm's reputation.

Reputation Develops Over Time

Just as firms compete for customers, they also vie for reputational status (Fombrun and Shanley 1990). This competition and the resulting firm reputation occur over time and after some historical consistency of firm action (Avlonitis et al. 1994; Fombrun 1996; Rao 1994; Weigelt and Camerer 1988). Reputation is generally attributed to an organization by its multiple constituencies based upon their unique past experience with the organization, its performance, its partners and products and can thus be thought of as a "social memory" (Vendelo 1998). In essence, reputation is both *earned* and *learned*. It is necessary here to distinguish reputation from image when image

is defined as the immediate mental picture that someone has of an organization (Gray and Balmer 1998) and is therefore a more transparent notion than reputation. Image is much easier to create than reputation. Once acquired however, reputations are more enduring (Russo and Fouts 1997; Vergin and Qoronfleh 1998) provided that the organization is vigilant in its efforts to preserve or enhance the reputation (Donlon 1998). Given the increasingly blurred boundaries between corporations and their stakeholders, strategically managing a corporate reputation is fast becoming a necessity (Gray and Balmer 1998). In essence, a favorable corporate reputation is usually the product of years of demonstrated competence, which takes time to create, cannot be transferred and is easy to damage (Hall 1992).

Multifaceted Nature of Reputation

While firm reputation is often referred to in broad or all-encompassing terms, it actually is a multifaceted construct. In addition to a general corporate reputation, firms can have action-specific reputations. Examples include reputations for social responsibility (Brown and Dacin 1997; Smith 1994), pricing aggressiveness (Kreps and Wilson 1982; Milgrom and Roberts 1982) and product quality (Keller and Aaker 1994) among innumerable other similar attribute-level reputations with each facet being related to, yet distinct from, a general reputation. In essence, the global perception of a firm's reputation can comprise multiple action-specific reputation facets. Further, the perception of a firm's reputation is likely to vary by individual.

Both general and action-specific corporate reputations develop over time as individuals are exposed to the historical actions of a firm (Avlonitis et al. 1994; Fombrun 1996; Rao 1994; Weigelt and Camerer 1988). Firms can actively shape reputational perceptions of the company by their actions (e.g., fostering a reputation for 'green' marketing). These attribute-level reputations can appeal greatly to relatively more highly involved constituencies while potentially enhancing

the perception of a general reputation among relatively less involved constituencies. In the non-financial outcomes section of the dissertation, the locus of interest is on operationalizing the reputation for product innovation (RPI) construct and investigating its effect to determine the value of this specific intangible resource to firms. RPI is a firm constituent (e.g., consumers) perception of the innovativeness of the firm.

Despite the multifaceted nature of corporate reputation, managers often refer to reputation in a global sense. A popular anecdotal measure of reputation, *Fortune* magazine's annual survey of America's Most Admired Companies, is simply a conglomeration of various facets of organizational reputation. Such an approach to reputation assumes that all facets of reputation are equally relevant and that reputation has no independent value except as a sum of its attributes (Rowe, Cannella, and Harris 1998; Shenkar and Yuchtman-Yaar 1997). While understanding the impact of a firm's general reputation is informative, this myopic view may not be a wholly accurate assessment of reputation. As such, this dissertation takes the multifaceted approach to corporate reputation and focuses on a firm's perceived reputation for product innovation and its hypothesized outcomes. Various individuals may perceive certain action-specific reputations as more personally salient than other reputation facets. As such, action-specific reputations may be the drivers of a general reputation. For instance, even a firm's perceived reputation for something seemingly unrelated to its product line (e.g., charitable social activities) is likely to influence an individual's perception of that firm and its products.

Reputation Is Perceptual

Organizational reputation is perceptual and therefore socially constructed (Berger and Luckmann 1966; Fombrun and Shanley 1990; Rao 1994; Shenkar and Yuchtman-Yaar 1997) in that an individual's assessment of a firm's reputation is solely the perception of that individual

regardless of any supporting or conflicting independent evidence. Firm reputations arise from people's impressions of an organization (Gray and Balmer 1998; Vergin and Qoronfleh 1998). When dealing with an intangible resource such as reputation, it is important to note that perceptions are bound to the context within which they arise (Berger and Luckmann 1966). As such, if investigating the impacts of a reputation for product innovation, for example, one cannot simply rely on a proxy (e.g., number of patents filed, R&D dollars spent) to adequately capture the true measure of an organization's RPI or to corroborate an existing measure. Likewise, perceptions across constituency groups might conceivably vary and could produce distinct outcomes across groups. In other words, while a firm's reputation exists in people's minds, there is no unanimously shared corporate image for any given company (Berger and Luckmann 1966; Brown and Dacin 1997; Fombrun and Shanley 1990). From a multi-constituency view, a firm attribute or reputation having a negative connotation for one constituency may have a positive or neutral connotation for another (Shenkar and Yuchtman-Yaar 1997) and would require constituency-specific measures of reputation in order to adequately capture the necessary perceptions.

OUTCOMES OF REPUTATION

A positive reputation provides many favorable outcomes for organizations. In advertising, for example, a positive reputation influences consumer attitudes and purchase intentions (Lafferty and Goldsmith 1998) while also increasing ad claim credibility – even at extreme claim levels (Goldberg and Hartwick 1990). A positive reputation can allay consumer fears about a newly introduced product by conveying information about unobservable product quality (Rao et al. 1999). In other terms, a favorable reputation can reduce cognitive uncertainty. Other posited

effects of a positive corporate reputation are the ability of firms to charge price premiums (Cameron and Whetten 1983; Klein and Leffler 1981; Shapiro 1983; Taher, Leigh, and French 1996), to identify and assess alliance partners (Dollinger, Golden, and Saxton 1997), and to ultimately be more profitable than competitors with relatively lesser reputations. In essence, a superior reputation is proposed as an intangible firm resource that leads to a competitive advantage (Gray and Balmer 1998; Hall 1992, 1993; Petrick et al. 1999) and ultimately, to greater profits (Fombrun and Shanley 1990; Russo and Fouts 1997; Wilson 1985).

In addition to a general reputation, firms may be perceived as having other action-specific reputations that manifest themselves in varied ways. For example, a favorably perceived corporate reputation for social responsibility (e.g., charitable, "green") positively affects consumer's beliefs and attitudes (Brown and Dacin 1997; Smith 1994) and ultimately may lead to greater profitability. Some consumer purchasing decisions are therefore impacted by a firm's corporate citizenship reputation. Action-specific reputations will logically impact inter-firm competition as well. A reputation for pricing aggressiveness (i.e., willingness to use price-cutting tactics) potentially creates an entry barrier by signaling to competitors what the cost of doing business in a specific market is likely to be (Karnani and Wernerfelt 1985; Kreps and Wilson 1982; Milgrom and Roberts 1982). Such a specific reputation, earned via historical actions, signals competitors to how profitable or contested a certain market segment may be. Firms may also have various action-specific reputations such as for product quality, service responsiveness and customer service that are correlated with, yet distinct from, their general corporate reputation. Contemporary efforts at firm reputation building (e.g. 3M, Michelin, International Paper) indicate a perceived corporate value in fostering an action-specific public reputation for product innovation.

GAPS IN THE REPUTATION LITERATURE

While research on reputation is both established and multi-disciplinary, there are certain gaps in the literature. For instance, while a multiple constituency approach to studying firm activities is established (e.g., Dowling 1986; Fombrun 1996; Freeman 1984), investigations of the impact of firm reputation on certain constituencies such as consumers, suppliers and employees remains conspicuously absent (Fombrun and Shanley 1990; Shenkar and Yuchtman-Yaar 1997). It is plausible that consumers might have a different perception of a firm's reputation than that of the firm's competitors, employees or suppliers. Accepting, by definition, corporate reputation as a social construction (Berger and Luckmann 1966; Fombrun and Shanley 1990; Rao 1994), it is myopic to investigate reputation solely from the viewpoint of one constituency to the exclusion of others. Thus, an exploration of the potentially varied constituency-based (i.e., non-financial) outcomes of corporate reputation is of academic and managerial relevance.

Further, to view corporate reputation solely in broad terms may limit the ability of managers to focus on areas where strategic prescriptions might favorable impact reputational perceptions. As previously noted, reputation is a multifaceted construct and various action-specific facets of reputation (e.g., social responsibility) have distinctive impacts (e.g., favorable attitude toward the firm) that can lead to a broader general reputation. Gaining a better understanding of these various facets allows researchers to formulate more precise managerial prescriptions as opposed to attempts to manipulate global corporate perceptions.

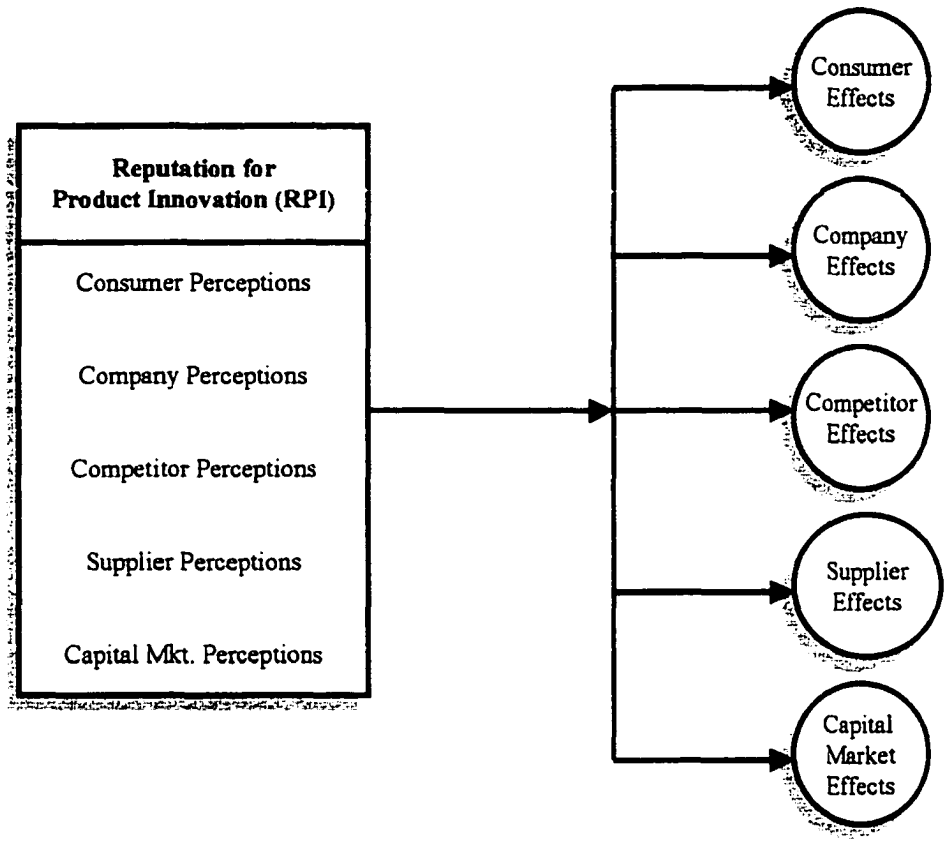
One facet of firm reputation where a knowledge gap exists is a reputation for product innovation (RPI). As contemporary anecdotal evidence suggesting that being perceived as a firm with a high RPI is beneficial mounts (Valery 1999), an academic investigation of the perceived effects is both timely and warranted. While understanding the outcomes of RPI is of practical

strategic importance to researchers and managers (e.g., does it create a SCA, foster loyalty, influence the competitive environment?), innovation research remains overly focused on the more tangible, product introduction focused aspects of innovation. The relative ease of capturing tangible financial variables is one practical reason. Reputation, specifically, an action-specific one (e.g., RPI), is relatively more difficult to operationalize. The intangible nature of the construct coupled with difficulties inherent in obtaining discriminant validity from a general corporate reputation may also play a role in the current lack of research on RPI.

THE IMPACT OF A REPUTATION FOR PRODUCT INNOVATION

Figure 2.1 illustrates the Multifaceted Impact Model of a Reputation for Product Innovation. The perceptual nature of a RPI is noted in the figure as are the varied constituencies impacted by a corporate reputation. This model recognizes that RPI is a multifaceted construct. It comprises a firm's track record of innovation, its persona of creativity and its promise of continued innovative activity among other facets. As with any operationalization of an intangible firm resource such as reputation, the RPI construct must take into account an individual's perceptions of, experienced with and expectations of a firm's product innovativeness (Weigelt and Camerer 1988). In essence, an organizational reputation is not one-dimensional nor is it perceptually singular. While one may speak of a firm's RPI in general terms, the perceptual nature of reputation insists that investigations of the impact of RPI take into account that it is "in the eye of the beholder." As such, the constituent-specific perceptions of reputation appear in Figure 2.1.

FIGURE 2.1
The Multifaceted Impact Model of a Reputation for Product Innovation



In general, a firm's reputation for product innovation impacts at least five organizational constituencies: consumers, employees, competitors, suppliers and the capital market (Dowling 1986; Freeman 1984; Fombrun 1996). Each constituency may form unique perceptions of a firm's RPI and the resulting effects of these perceptions are likely to vary across constituencies (Fombrun and Shanley 1990). Figure 2.1 provides an overview of what is, in reality, a fairly complex array of perceptions and outcomes. For clarity, only broad, main effect relationships appear. Factors hypothesized as contingency variables in the relationships between an innovative

product reputation and the respective constituency-specific effects appear in more detailed figures in subsequent chapters.

The dissertation now focuses more specifically on the financial and non-financial outcomes of innovation. By gaining a better understanding both of these outcomes of innovation, managers and researchers may gain insight into a firm's competitive resources and be better equipped to prescribe effective and efficient firm strategies. Chapter III introduces the conceptual development for the financial outcomes model of this research. Hypotheses for the determinants of marketplace performance are then presented. Empirical investigation of the financial outcomes hypotheses occurs in Chapter IV. The conceptual development of the non-financial outcomes model appears in Chapter V in addition to the formal hypotheses. Empirical investigation of select non-financial outcomes occurs in Chapter VI. The dissertation concludes with a summary of financial and non-financial outcomes of innovation in Chapter VII.

CHAPTER III

CONCEPTUAL DEVELOPMENT AND HYPOTHESES FOR FINANCIAL OUTCOMES

The resource-based theory of the firm (Barney 1991) proposes that firms achieve competitive advantage via competing on their inherent tangible and intangible resources. While the general relationship between tangible resources (e.g., new products) and financial outcomes is discussed in Chapter II, the discussion now turns to a more detailed examination of the innovation literature to develop specific relationships.

DOMINANT PARADIGMS IN INNOVATION FINANCIAL PERFORMANCE

The disparate empirical findings for financial outcomes denoted in Chapter II raise the following questions about the drivers of new product marketplace performance:

- *Are the respective relationships positive or negative, on average?*
- *Are the effects statistically significant, on average?*
- *What is the absolute magnitude of the individual predictor effect that can be expected, on average?*
- *What is the relative magnitude of the respective predictor effect (i.e., which factors are the key drivers)?*
- *To what extent is the observed variance in the estimates of association real and what proportion of that variance can be attributed to measurement and method artifacts?*

Answers to these questions are currently not available within a single study and cannot be gained by simply reading a sampling of studies. Thus, while the theoretical discussion that follows focuses predominantly on the first two questions noted above, a subsequent focus in this dissertation centers on addressing the absolute and relative magnitudes of the predictors in

addition to the sources of variance in their estimates. A conceptual discussion offers a necessary foundation and suggests that any significant effects subsequently uncovered in the meta-analysis are likely to be non-spurious. It further provides information to those interested in specific determinants with the underlying rationale for association.

In this chapter, the theoretical generalities of innovation financial performance are presented. The discussion is arranged by the categorization scheme outlined in Table 2.1. Predictions as to the direction of the relationship between each determinant and performance are hypothesized and then empirically evaluated in the subsequent meta-analytic section of the dissertation. It should be stated that the hypotheses for the financial outcomes of innovation are derived from the respective discussions. They serve merely as an organization of thought and are not intended as *a priori* hypotheses. Figure 3.1 details the model of the dominant determinants of innovation performance as depicted in the literature. Specific hypotheses – outlined in the subsequent discussion – appear appropriately in the figure.

FIGURE 3.1
Model of the Dominant Determinants and Covariates of Financial Outcomes

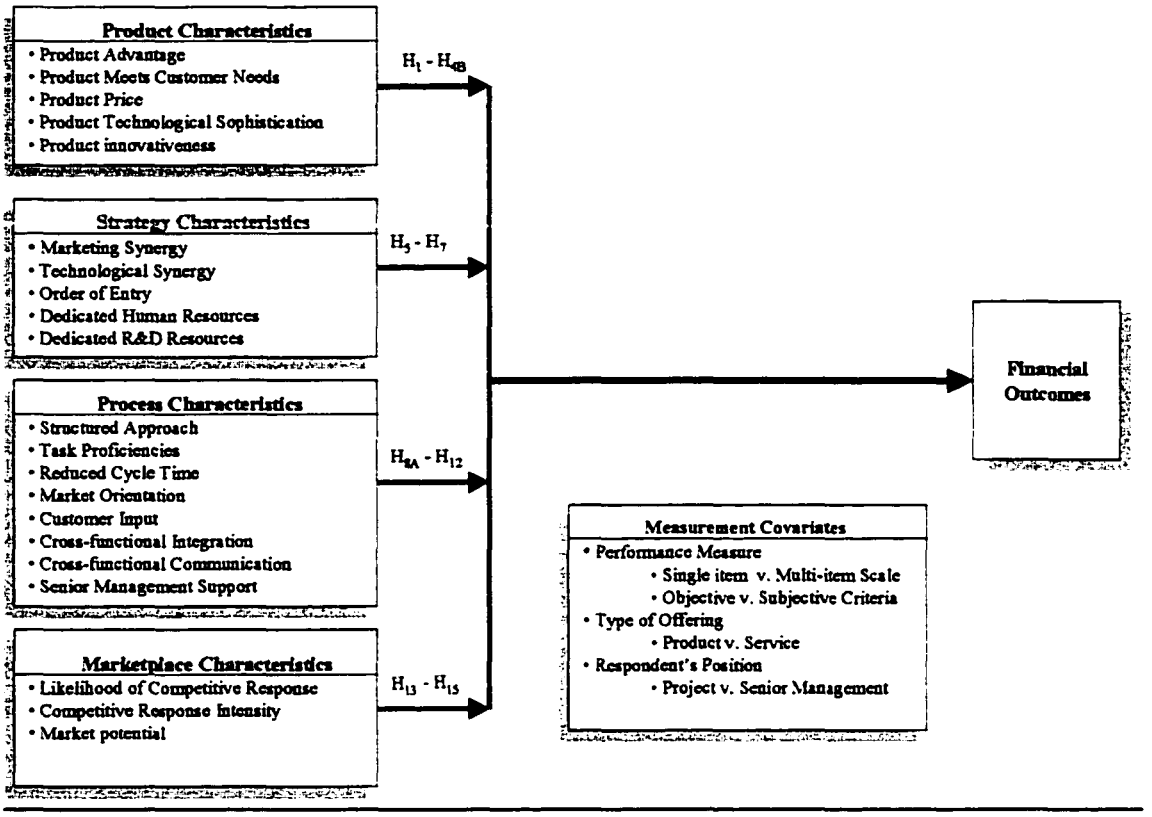


Figure 3.1 graphically portrays the antecedents of financial outcomes that appear most often in the innovation literature. In review, financial outcomes are defined as the marketplace performance metrics commonly used to measure and evaluate the performance of new product introductions (e.g., sales, share, ROI). As with Table 2.1, the determinants are organized into four categories for parsimony of discussion. The product characteristics category, for example, contains those factors that specifically pertain to the product introduced to the marketplace and thus reflects various product-related facets of innovation. Strategy characteristics comprise the strategic actions of a firm that precede a market performance measurement. Examples include the

use of firm resources (e.g., human resources) in an innovation initiative and the degree of congruency between existing firm resources and resources necessary to effectively compete in the marketplace.

Process characteristics portray those determinants that are associated with the planning aspects of a new product development (NPD) initiative. The degree of cross-functional integration between internal departments during the NPD initiative is one example of a process characteristic. Each factor centers on the mechanics of *how* an initiative is accomplished. Marketplace characteristics comprise those variables associated with the competitive environment. The action of competitors is one facet of this category (e.g., competitive response) while the impact of the consumer base (e.g., market potential) is the other. Reflecting the modeling of the respective effects in the available literature, each determinant appears in the figure as a direct-effect on the dependent variable, financial outcomes.

Montoya-Weiss and Calantone (1994) state that a lack of investigation of important moderator or covariate factors hampers the growth and progress of the innovation literature stream. Additionally, guidelines for conducting meta-analyses (e.g., Hunter and Schmidt 1990) advocate the search for potential covariate variables that may "explain" some of the variance in effect size evidenced across multiple studies. The available literature permits the empirical testing of the impact of certain measurement factors on the hypothesized relationships. As such, these measurement covariates appear in Figure 3.1 and are investigated in addition to the direct-effect relationships. Following, each of the four categories of NPD determinants is discussed in greater detail and hypotheses are presented for each.

Product-related Generalities

Product Advantage. Despite claims that a product's design, features and attributes have been hailed as the leading edge in new product strategy (Cooper and Kleinschmidt 1987), there is a relative paucity of research on how certain product characteristics specifically impact new product performance. Where research has been conducted, product advantage, defined as superiority and/or differentiation over competitive offerings, is an important antecedent to new product success. Cooper and Kleinschmidt (1993) find that product advantage not only has a strong, positive impact on new product success but that it is the dominant predictor of success. Key product success characteristics in their study include relative product quality (compared to competition), perceived product value and the price-performance congruency. It stands to reason that if consumers perceive a product to be of high quality, to offer good price-performance value and to meet overall consumer desires/needs, it will possess an advantage over competitive offerings and is thus more likely to be a marketplace success.

While the majority of studies on product determinants focus on tangible products, intangible products such as service delivery are also investigated. Cooper and de Brentani (1991) note that product advantage is key to new service success as well. The characteristics of successful service "products" include unique and superior benefits to customers, value-added services, higher quality and greater reliability (Cooper and de Brentani 1991). Interestingly, Cooper and de Brentani find that product advantage in a service setting, while having a positive impact on performance, does not rank as highly as product advantage in a tangible product setting. The reality that services are easily imitated and that potential customers often have difficulty in comparing competitive services may account for this result (de Brentani 1989). One way to counter this discrepancy may be for the service provider to create a tangible association

with the service in the customer's mind (Shostack 1977). Further, the intangible nature of service encounters means that customers frequently rely on firm reputations when evaluating a new service product (de Brentani 1989). Hence, developing a strong corporate reputation for quality and value may prove rewarding to both product and service providers alike. Thus,

H_1: The association between the degree of relative product advantage and financial outcomes is positive.

Meeting Customer Needs. Aside from the effect of overall product advantage on new product success, it stands to reason that several of the elements that define advantage would have an individual effect on NPD success. For example, the degree to which the offering meets or satisfies consumer needs could exert a positive impact on new product success in its own right. Research findings document that satisfaction levels play a pivotal role in consumers' buying intentions and complaining behaviors (cf. Yi 1990). Research indicates that happier consumers are more likely to buy the offering again and less likely to dissuade other consumers from making a similar purchase. Because it seems reasonable to expect that these effects would also be present in the context of new products, the expectation is that satisfying or meeting consumer needs and the successful marketplace performance of innovative offerings will be positively related. Thus,

H_2: The association between the extent that a product meets customer needs and financial outcomes is positive.

Product Price. In addition to meeting consumer needs, having consumers perceive the firm as offering favorable prices and relative value is likely to play a significant role in new product success because most consumers are likely to be price conscious or price sensitive to some degree. Few consumers are likely to have unlimited budgets and few are likely to freely spend their money with no contemplation or emotional reactions at all (Bagozzi, Gopinath, and Nyer 1999). Findings by Cooper and Kleinschmidt (1993) and de Brentani (1989), documenting

that favorable prices play a positive and statistically significant role in new product performance, attest to the logic behind this hypothesized relationship. Consequently, the expectation is that favorable price perception and new product performance are positively correlated.

H_3: The association between the degree to which price perceptions are favorable and financial outcomes is positive.

Product Innovativeness/Technological Sophistication. Just as the broad concept of product advantage is hypothesized to create a competitive marketplace advantage, a relatively higher degree of product innovativeness or technological sophistication is often cited as a source of sustainable competitive advantage. In other words, superior product design—which is inextricably linked with the technological sophistication and innovativeness/radicalness of the design—is widely promoted as integral to the marketplace success of new product offerings (Bruce and Whitehead 1988). Geroski, Machin, and Van Reenen (1993) note that the competitive effects of highly innovative products (i.e., radical innovations) are large, positive and long lasting. Such breakthrough products have the capacity to impact the competition by stealing away a competitor's customers or obsolescing their competitive advantage (Anderson and Tushman 1990). Such cutting edge products are distinguished from the more commonly found incremental product introductions in that radical innovations tend to disrupt the status quo. Thus,

H_{4A}: The association between the degree of product innovativeness and financial outcomes is positive.

H_{4B}: The association between the degree of product technological sophistication and financial outcomes is positive.

Recently, the impact of product characteristics on performance is substantiated across cultural boundaries as well. Song and Parry (1996) report relatively high, positive correlations between product advantage and various measures of new product success in their study of Japanese firms. Likewise, Mishra, Kim, and Lee (1996) find similar support in their study of

Korean firms with three significant variables associated with performance all relating to product characteristics. These studies extend the original propositions of Cooper (1979) and Cooper and Kleinschmidt (1987) and lend empirical support to the belief that product characteristics are universal in their impact on marketplace performance.

Strategy-related Generalities

A category of determinant factors that receives a strong amount of scholarly interest and one that directly impacts other categorizations discussed here is that of strategic initiatives by the innovating firm. Successful product introduction does not happen by mere chance. New product performance closely ties to the strategy that a firm elects (Booz-Allen & Hamilton 1982; Cooper 1984a). The new product strategy selected closely associates with and has a positive, yet differing, impact on subsequent marketplace performance (Cooper 1984a; Griffin and Page 1996). Discussions of firm strategy primarily center on the variables that are amenable to management action and how those actions impact performance (Cooper 1984b). This category of performance determinants is understandably multifaceted and covers such strategic issues as marketing and technological synergy, resource allocation, order-of-entry and promotional activity. A discussion of each of these determinants follows.

Synergies. The synergy issue receives considerable attention by innovation scholars. Synergy refers to the degree of congruency between the skills and experiences of an innovating firm's employees and the skills and experiences necessary to effectively address a new product situation. Prescriptions as to the degree of congruency between a firm's marketing or technological arsenal and the needs of a given market are slightly mixed. Cooper and Kleinschmidt (1987) postulate that building on existing firm strengths, skills and experience is more likely to result in market success than seeking out opportunities that are far from a firm's experience and

resource base. They find statistical support for their hypotheses in about half of their success measures pointing toward synergy as a positive success factor. Conversely, Atuahene-Gima (1996) prescribes a reduction in synergy for service providers given the ease of competitive imitation. Cooper (1984a) likewise supports a reduction in synergy claiming that to achieve "high impact" products, the firm must employ an aggressive strategy that may take the company out of its comfort zone.

Cooper and de Brentani (1991) find that the primary factor differentiating between success and failure in their service firm sample is the degree of fit between the needs of the project and the resources and skills of the company. Indeed, firms with high degrees of business synergy were over four times as likely to have successful financial outcomes than those service firms that lacked synergy. These results indicate that synergy in a service environment may be more important than in a tangible product environment. The reasoning is that the success of new services is predominantly dependent upon the skills and experience of the people who deliver them. If the skills vital for success lie outside of the skill set of the service provider, an inferior product and customer dissatisfaction may result (Cooper and de Brentani 1991). Ironically, service firms may be more likely than their manufacturing counterparts to develop innovations that have greater incompatibility with current procedures and skills in their fervor to match competition and forestall imitation (Atuahene-Gima 1996). The extant evidence offered in support of the role of marketing and technological synergies in new product performance is therefore mixed. Thus, any hypotheses regarding the relationships inherently entail some degree of speculation on the net direction of the respective effects that will result once the cumulative evidence is analyzed. While the determination of relationship direction is best relegated to the empirical portion of the meta-

analysis, the hypotheses forwarded here err on the side of the preponderance of extant research. Hence,

H_{5A}: The association between the degree of marketing synergy and financial outcomes is positive.

H_{5B}: The association between the degree of technological synergy and financial outcomes is positive.

Order-of-Entry. Order-of-entry effect studies historically exhibit mixed results. Where certain studies lend empirical support for market pioneering advantages (e.g., Lambkin 1988; Robinson and Fornell 1985), others have discounted the first-mover impact (e.g., Golder and Tellis 1993; Lilien and Yoon 1990). In a fairly recent work (Barczak 1995), over 75% of firms surveyed categorized themselves as either first-movers or fast-seconds with regard to their new product entry timing strategy. Barczak finds that no single timing strategy appears to dominate as a success predictor variable possibly indicating that marketplace performance may depend more on the product-market synergy than on any individual timing strategy (Robinson, Fornell, and Sullivan 1992). Given the conflicting opinion of order-of-entry advice, Wind and Mahajan (1997) posit that the critical question that innovating firms must ask is whether the marketplace is ready for the new product. They note that the issue offers intriguing research opportunities to assess the readiness of a market for a proposed product. However, the empirical studies investigated in this meta-analysis consist of extant assessments of whether being first to market positively impacts market performance. Given extant thought on the pioneering advantage accruing to first movers and the firm self-categorizations noted above (Barczak 1995), one expects that

H_6: The association between being a market pioneer and financial outcomes is positive.

Dedicated Resources. Successful innovation requires a special combination of entrepreneurial, managerial and technological roles (Maidique 1980). The first component,

entrepreneurial roles, plays a vital part in innovation generation and success (Schumpeter 1942). Be it through the efforts of a group of individuals or a product champion, the impact of dedicated human resources on the success of a NPD initiative is widely believed to be positive. Dedicated individuals are better able to deflect internal resistance as well as to successfully navigate organizational channels (Maidique 1980) than less involved individuals. The dedication of human assets is not merely limited to individuals, as a focused distribution effort by a firm's salesforce, for example, would also qualify as dedicated human resources (Mishra et al. 1996). Likewise, a commitment to R&D programs and expenditures is briefly examined with regard to its impact on new product success. Such an appropriation is a further indicant of firm resource commitment to an initiative, yet from a more financial perspective. Morbey (1988) finds that firms that consistently spend heavily on R&D have an above average chance of improving new product returns. He further finds strong support for a relationship between R&D spending and market growth rates in research-intensive industries, yet finds no relationship in less research-intensive industries. This latter finding indicates that a tenuous relationship is likely to exist but that it may be prone to moderation by environmental factors. Given the above,

H_7: The association between the degree of dedication of firm resources and financial outcomes is positive.

Process-related Generalities

Structured Approach/Task Proficiency. Having a structured approach to the NPD process is historically associated with successful innovations (Booz-Allen & Hamilton 1982; Cooper and Kleinschmidt 1986). Lopez and Roberts (1997) extend this association beyond industrial products with their hypothesis that financial service firms employing more formalized product development procedures will have larger product arrays and operate in more markets than their less formal competitors. The traditional *stage gate* process, epitomized by Booz-Allen &

Hamilton (1982), postulates that a series of steps must be undertaken to heighten prospects for an innovation's success. The steps are historically considered to be loosely linear in nature although some concurrent activity is expected. Lately, such a conceptualization of the NPD process as steps has come under fire as being both overly general and lacking specific guidance (Dwyer and Mellor 1991) as well as being cumbersome and inappropriate in turbulent times (Wind and Mahajan 1997). It is not the steps, per se, that are called into question, simply the linear nature of the process. Current calls for reduced cycle time, coupled with a shrinking competitive advantage gap in many industries point toward the need for concurrent product development.

Whether linear or concurrent, both anecdotal and empirical research indicates that, even where a specified process is in place, many firms do not necessarily perform all of the prescribed steps (Cooper and Kleinschmidt 1986; Dwyer and Mellor 1991). When fewer steps are undertaken, the associations with marketplace failure increase and vice versa (Cooper and Kleinschmidt 1986; Dwyer and Mellor 1991). However, merely performing these steps is insufficient; higher degrees of proficiency at any given step are associated with an increased likelihood of innovation success (Dwyer and Mellor 1991). Booz-Allen & Hamilton (1982) make the point that firms that are successful at NPD spend more money on development activities than unsuccessful firms, drawing the inference that increased attention and *proficiency* in the steps leading up to new product development, introduction and evaluation increase product performance. These proficiencies include proficiency in pre-development tasks (e.g., idea generation and screening), marketing, product technology and product launching. The expectation is that greater proficiencies in each of these areas are likely to positively affect the success of new products.

Product development activities are generally proposed to have a positive impact on new product performance. Booz-Allen & Hamilton (1982) note that successful innovating firms are more likely than not to have a strategic plan and to have a step-by-step developmental process in place. Hise, O'Neal, McNeal, and Parasuraman (1989) substantiate this belief finding that, in their sample of industrial products firms, companies utilizing product development activities perform better than others that do not. Further, the number of *cumulative* activities undertaken has a positive impact with a higher number of cumulative activities employed being associated with greater product success. Bridging a structured approach with inter-functional integration, Crawford (1984) prescribes inter-functional agreement on how developmental activities are formulated and executed to help ensure new product success.

The execution of multiple developmental activities surfaces an inherent tension that exists for any innovative firm; namely, the tension that exists between the desire to initiate effective pre-launch activities on the one hand and the competitive pressures to quickly enter the market on the other. The intangibility and imitability of services may strengthen this friction for service firms. For instance, scholars have discovered that service firms may spend considerably less time contemplating up-front activities than their industrial counterparts (Atuahene-Gima 1996; Cowell 1988; Wind 1982). The literature appears to generally support a positive relationship between developmental activities and performance, therefore, it is expected that

H_{8A}: The association between the use of a structured approach to a new product initiative and financial outcomes is positive.

H_{8B}: The association between the proficiency with which process-related steps are conducted and financial outcomes is positive.

Reduced Cycle Time. One of the more strongly held beliefs by managers and scholars is that reduced cycle time (i.e., time to market) translates into stronger marketplace performance (cf.

Millson, Raj, and Wilemon 1992). The benefits of reduced cycle time include increased profitability as well as all of the advances associated with a first-mover advantage (Wind and Mahajan 1997). In high tech industries where product life cycles are short and in service related industries where mimicry quickly erodes competitive advantage, reduced cycle time is perhaps even more beneficial to firms. This view is tempered by studies (e.g., Kerin, Varadarajan, and Peterson 1992) that suggest that reduced cycle time, in the form of first-to-market, does not *directly* translate into a competitive advantage but merely provides firms with opportunities for gaining positional advantages. Despite widespread anecdotal acceptance that cycle time directly impacts performance, empirical investigation of the relationship is surprisingly sparse. Datar et al. (1997) break down cycle time into three stages (concept generation, prototype completion, volume production) and investigate whether lead-time advantages over competition at any of the stages translates into sustainable competitive advantage. They propose that advantages in lead-time positively impact market performance. Hence,

H_9: The association between the degree of reduction in product development cycle time and financial outcomes is positive.

Market Orientation. A growing topic in innovation literature is the concept of market orientation (Kohli and Jaworski 1990; Narver and Slater 1990; Slater and Narver 1994) and how it directly impacts new product performance. Atuahene-Gima (1995) regressed market orientation on product and project performance finding a positive association for both. He further finds a positive relationship between market orientation and other determinants of innovation performance such as synergy, pre-development activities, product advantage and other process variables. This suggests that the strength of a firm's customer, competitor and internal orientation may positively impact its innovative output. In fact, Cooper (1984a) calls for firms to develop a market orientation by focusing on market need identification and by actively seeking new product ideas

from the marketplace. Hurley and Hult (1998) claim that being market oriented provides both a source of ideas for change and improvement and a desire to assimilate new ideas.

Knowledge of the customer enhances new product advantage because it enables firms to explore innovation opportunities created by emerging market demands while concurrently reducing the potential risks of mis-fitting customer needs (Li and Calantone 1998). Likewise, knowledge of the competition provides a diagnostic framework from which a firm can benchmark its competitive position and can provide increased opportunities for the informed firm (Li and Calantone 1998). De Brentani (1989) claims that strong market orientation is a key to achieving a high level of sales and market share in the services field as well. She adds that an internal orientation is also essential as pre-selling a new service product to frontline personnel plays a key role in whether the product gains marketplace acceptance or not (de Brentani 1989). Hurley and Hult (1998) find that an innovative internal culture also has a significant and positive effect on a firm's ability to successfully implement subsequent innovations. Therefore,

$\mathbf{H_{10}}$: The association between the extent of firm market orientation and financial outcomes is positive.

Cross-functional Integration/Communication. In many firms, product innovation is truly a multidisciplinary process (Gupta, Raj, and Wilemon 1986) and full integration of diverse functional perspectives is a necessity (Wind and Mahajan 1997). The successful integration and interaction of the Marketing, R&D, Sales, Engineering and Production departments, among others, is thought to be necessary if a NPD initiative is to have an increased likelihood of success. Arguably the most researched integration is between the R&D and Marketing functions. Research indicates that successful R&D-Marketing integration results in more successful financial outcomes while the opposite holds for less than successful integrations (e.g., Cooper and Kleinschmidt 1995; Souder 1981, 1988). It is well accepted that the R&D-Marketing integration,

at least, has a strong positive relationship with innovation success (Gupta et al. 1986) and that other successful inter-functional integrations are necessary precursors to marketplace success. Yet, disharmony and lack of trust among inter-functional team members persists with nearly 60% of firms in one study reporting a relatively high incidence of disharmony (cf. Souder 1988).

Inter-functional integration holds potential advantages for the product development process. It is critical, however, that the "tools" of each department be utilized throughout the integration process (Wind and Mahajan 1997). Participative decision making, consensual conflict resolution and open communication processes that are available to such integration can aid in reducing individual and functional barriers which, in turn, can create an atmosphere where innovative ideas flourish with minimized risks (Olson, Walker, and Ruekert 1995). It can also hold potential pitfalls if integration is not governed effectively (cf. Souder 1988 for an elaboration). The degree to which inter-functional integration is necessary depends on contextual factors such as the strategic orientation of the firm, environmental uncertainty and assorted organizational factors (Gupta et al. 1986). It should be noted that investigations of inter-functional integration are largely subjective managerial assessments and that a blanket measurement is unlikely to adequately measure the numerous intangible facets subsumed under the integration terminology.

One expects improved performance from inter-functional integration, yet inter-functional relationships, in reality, have more aspects than researchers can effectively operationalize. Fortunately, efforts to isolate and test some of these facets have been undertaken. For example, inter-functional communication efforts – namely, how well or how often functions communicate with each other –receives some scholarly attention and meets with mixed results. Pinto and Pinto (1990) state that communication across multiple functional areas is critical to the successful

implementation of projects and that lack of communication is linked to NPD failure. Given this perceptive prescription for NPD success, it is somewhat ironic to find evidence that communication across functions is non-uniform and sporadic with functions more likely to contribute and receive information only in development stages for which they have primary responsibility (Rochford and Rudelius 1992). Given the degree of functional specialization of their sample (medical industry), this last result may not be aberrant. Kahn (1996) fails to find statistical support for a communication-performance relationship and, in fact, finds some negative correlations. This may indicate that inter-functional communication may be a necessary but not sufficient component of NPD success (Kahn 1996) and that *better* communication is preferable to *more* communication. Thus,

$\mathbf{H_{11}}$: The association between the extent of cross-functional integration and financial outcomes is positive.

The degree of cross-functional communication and financial outcomes is likely to be related. The lack of consensus on the likely direction of the relationship coupled with the relative dearth of empirical evidence prevents the development of a meaningful hypothesis. However, the net direction of this relationship remains an empirical issue and will be examined in Chapter IV of the dissertation.

Senior Management Support. Support for NPD initiatives by senior management is widely recognized as a positive contributing factor to the success of new products (Booz-Allen & Hamilton 1982; Maidique and Zirger 1984; Rothwell et al. 1974). Yet, even though one finds a positive relationship for senior management support and performance, the degree of that relationship varies (Maidique and Zirger 1984). An empirical investigation of senior management impact by Cooper and Kleinschmidt (1987) finds only limited statistical support and a relatively low effect size. More recent works investigating North American, European and Asian firms (e.g.,

Cooper and Kleinschmidt 1995; Song and Parry 1996) find a relatively modest positive relationship between senior management involvement in NPD initiatives and ultimate marketplace performance. Given this, one anticipates that the senior management support-performance relationship is inherently positive. Therefore,

H_{12}: The association between the degree of senior management support for NPD initiatives and financial outcomes is positive.

Marketplace-related Generalities

Competitive Response. Prevailing thought as to the impact of competitive forces upon new product performance is conflicting, at best. Cooper (1979) unequivocally states that competitive factors in the marketplace "do not play a critical role in deciding new product success." Similarly, Cooper and Kleinschmidt (1987) conclude that there appears to be no relationship between market competitiveness and new product success. Of eleven measures of product success in the Cooper and Kleinschmidt study, none were significantly related to the degree of market competitiveness. Since correlation values are not reported for non-significant results, the size of the correlation in the study cannot be assessed. Conversely, other studies have identified competitive factors as being negatively, if only at a minor level, related to new product success/failure (cf. Booz-Allen & Hamilton 1982; Cooper 1979, 1980).

More recent works indicate that a competitive environment is more of a negative factor than previously thought. Parry and Song (1994) note that the six market factors having the largest negative correlations with new product performance among Chinese industrial firms are associated with competitive activities, which lies in sharp contrast to previous works. Song and Parry (1996) find a relatively small, yet statistically significant relationship between the two variables thus lending credence to the NewProd (Cooper 1979, 1980) conclusions. That competitive activity would have a minor or even a non-influence on marketplace performance seems intuitively

illogical. Non-significant results may indicate that the impact of competition on performance may be contextual, moderated or simply modeled incorrectly. Atuahene-Gima (1995) posits that the conflicting results occur because researchers always conceptualize competitive intensity as a direct determinant of performance when it is more aptly viewed as a moderating variable.

In an insightful study, Friar (1995) examined the American diagnostic ultrasound industry uncovering a 'disconnect' between firms and customers. Where product developers and firm management perceived quite a turbulent marketplace fraught with competitive intensity, customers failed to identify any meaningful differentiation among firms. In other words, competing firms engaged in what they perceived to be an intense competitive battle while customers failed to "appreciate the race".(Friar 1995). Redmond (1995) forwards an ecological view on the relationship pointing out that it may be contextual. He states that the food industry, noted for relatively numerous new product introductions each year, consistently posts high product failure rates while industrial product industries, noted for relatively few new product introductions, consistently have a relatively high new product success rate. As a market environment becomes increasingly characterized by high levels of new product introductions, more competitors may be encouraged to enter, consumer demand may become fragmented and channels of distribution may become saturated (Redmond 1995). This condition invariably contributes to a barrier for new product success (Cooper 1980).

There is further evidence attesting to the fact that competitive intensity and competitive responses are negatively related to success rates. This could result, for example, if competitors entice away customers (e.g., via better offerings) or if competitors can create barriers or impediments that would otherwise reduce the chance of any one offering being successful (Parry and Song 1994; Song and Parry 1996). Yet, studies documenting the likelihood of competitive

response and response intensity having a positive effect on new product performance are also available (e.g., Atuahene-Gima 1996; Li and Calantone 1998; Souder and Song 1997). These positive effects could be the result of a more competitive environment forcing the innovative firm to be even better at idea generation and new product introductions in anticipation of competitors quickly and perhaps effectively, responding to their actions. In effect, intense competition may breed even greater excellence in the new product development function. Collectively, these theoretical perspectives and empirical findings indicate that competitive response tendencies are mixed. The preponderance of academic thought however points to a negative relationship. Thus,

H_{13}: The association between the degree of competitive response activity and financial outcomes is negative.

H_{14}: The association between the degree of competitive response intensity and financial outcomes is negative.

Market Potential. Information concerning customers' needs, preferences, price sensitivities, etc. is essential for successful marketing (Calantone, Schmidt, and Song 1996). Yet, despite this generally understood maxim, we find relatively little NPD research directed at the customer-specific impact on new product success. Often in studies, customer effects are blended with competitor effects as part of an overall market environment factor. Rothwell et al. (1974) note that understanding customer needs is a critical determinant of new product success. In a similar vein, Calantone and Cooper (1979) find that a firm's failure to adequately understand customer requirements is a contributing cause of product failure in over one-quarter of reported industrial new product failures. Where customer effects are captured in the literature, they are often operationalized as either market potential - indicating either the number of or receptivity of a customer base - or the degree to which a firm responds to stated customer needs. Intuitively, either classification would seem to be positively related to subsequent market performance. Cooper and

Kleinschmidt (1987) find that market potential does have a positive correlation with performance but that its effect moderates across different measures of product success. Mishra et al. (1996) similarly conclude that market potential strongly relates to successful products but warn that industries associated with constantly changing customer needs (e.g., high technology industries) may face moderated success levels.

That the introduction of new products into a marketplace is beset with risks to the innovating firm is not questioned. Contacts with customers however, especially lead users, can help to reduce this risk (Gemunden, Heydebreck, and Herden 1992). In their study of European manufacturing firms, Gemunden et al. report that 75% of those firms believe that customer dialogue was helpful in the development of new products and 50% claim that such interaction with customers was a precondition to financial success. This aligns with earlier views that attention to market intelligence gathering activities with regard to customers will translate into successful new product performance (Calantone and di Benedetto 1988; Cooper and Kleinschmidt 1987; Rothwell et al. 1974) and implies that firms may successfully manipulate market potential. Hence,

$\mathbf{H_{15}}$: The association between the extent of market potential and financial outcomes is positive.

SUMMARY

This chapter offers a conceptual discussion of the determinants of the financial outcomes of innovation. For clarity of analysis, the determinants of financial outcomes are arranged into four categories: product characteristics, strategy characteristics, process characteristics, and marketplace characteristics. The developmental discussion in this chapter sets the stage for empirical evaluation of the noted determinants of financial outcomes to follow. While the framework used here to organize the determinants of market performance is not presented as the

de facto classification schema, it is a reasonable schema having pedagogical value and intuitive appeal that is consistent with existing classifications. Each of the preceding hypotheses, generated from a review of the literature, is subsequently subjected to empirical validation in Chapter IV. Building off of the resource-based view of the firm (Barney 1991), a conceptual examination of the less tangible non-financial outcomes of innovation follows in Chapter V with empirical validation of the non-financial outcomes occurring in Chapter VI.

CHAPTER IV

EMPIRICAL INVESTIGATION OF FINANCIAL OUTCOMES

INTRODUCTION

Against the conceptual backdrop of Chapter III, the purpose of this chapter is to conduct and present the findings from a meta-analysis of the empirical evidence on the antecedents to new product performance. This study complements previous reviews of the literature (e.g., Booz-Allen & Hamilton 1984; Cooper 1980; Montoya-Weiss and Calantone 1994) by further incorporating the exponential growth in empirical research findings. For example, 666 correlations from 41 studies involving new product performance and its determinants are analyzed. The only existing empirical examination of these determinants (i.e., Montoya-Weiss and Calantone 1994) analyzed 235 correlations from 12 studies. As this contrast makes apparent, not only has new product development gained the attention of managers as a point of emphasis in strategies for effective performance, it has captured the focus of a wider group of researchers as an important and topical area of academic study. This chapter begins with a description of the method employed to identify pertinent empirical studies and a description of potential covariate factors that may impact the direct relationships hypothesized in Chapter III. Following this discourse is a presentation and discussion of the findings.

METHOD FOR IDENTIFYING EMPIRICAL STUDIES

Numerous steps are taken to develop a comprehensive and current database of new product performance findings. First, the criteria for including studies in the analysis is delineated. Included manuscripts are all empirical studies with new product performance as the criterion

variable. The objective here is to identify and include all relevant studies on innovation performance in the meta-analysis and explicitly control for potential moderating elements or quality factors (e.g., differences in scale reliability) during the analysis of the findings. In this manner, bias resulting from researchers otherwise imposing subjective criteria on what constitutes an acceptable or high-quality study is minimized. This encompassing approach to database development and data analysis is supported by Hunter and Schmidt (1990).

The empirical studies on new product performance were identified through: (i) keyword searches of electronic databases (e.g., ABI/Inform, WILS, UMI ProQuest, Ovid) using 'new product performance,' 'success/failure' and 'innovation' - among others - as identifying terms, (ii) searches of the citations found in identified studies and (iii) manual searches of leading academic journals that include studies on new product performance, namely the *Journal of the Academy of Marketing Science; Journal of Consumer Research; Journal of Marketing; Journal of Marketing Research;* and *Journal of Product Innovation Management.* Upon gathering the studies on new product performance, the focus turned to identifying the measure of association (correlation, regression coefficient, d statistic, etc.) for use in the meta-analytic section of this study. This measure turned out to be the Pearson product moment correlation coefficient. The correlation coefficient is: (i) the metric used most often in the empirical studies to report performance relationships, (ii) the metric to which many performance findings can be converted (see Glass, McGaw, and Smith 1981) and (iii) the metric that captures the continuous properties in the product performance measure and its correlates.

In addition, letters were mailed to over two hundred published authors in the NPD field requesting any working papers and correlational data that may be relevant to this study. The authors, identified during the noted literature search process, are located in various countries and

represent multiple academic disciplines. These researchers were also asked for leads on working papers on the topic of new product performance by other scholars. Further, a request for working papers and correlation matrixes was posted on the electronic list server for marketing academic researchers (ELMAR, n=2530 documented subscribers) in a subsequent effort to ensure that the data contained in this study represents the most broad and current thought on the subject. The sum of these requests resulted in the receipt of two correlation matrixes for existing journal publications and twenty working papers on the requested topic – six of which are included in the empirical section of this study. In all, sixty-eight researchers responded to the requests while three letters were returned as undeliverable. All phases of the quantitative search process were terminated in January 1999 when it became apparent that further efforts were not yielding additional studies.

Ultimately, data from 41 of 60 empirical studies on new product performance is included in the database. Those studies not included in the meta-analysis either report statistical metrics not convertible to a Pearson correlation or the respective authors did not provide correlation data. While the absence of nearly one-third of applicable studies in this analysis indicates that some pertinent information will be unaccounted for in the subsequent analysis, the two-thirds inclusion rate is indicative of rates in the marketing literature. This inclusion rate of 68% is similar to the rates reported by Brown and Peterson (1993; 66%); Brown and Stayman (1992; 72%); Szymanski, Bharadwaj, and Varadarajan (1993; 63%); and Szymanski, Troy, and Bharadwaj (1995; 70%) in their respective meta-analyses. The forty-one studies included in the meta-analysis are comprised of thirty-five studies published in academic journals and six working papers. All factors having ten or greater correlations and found in two or more studies are analyzed in the meta-analytic section of this study. Those factors with either less than ten effect sizes or single

study factors are detailed in the Emerging and Idiosyncratic Paradigms section. In all, 666 correlations involving new product performance are included in the database.

The direction of the determinant-performance correlations was carefully coded to ensure accuracy and to capture information on associated methods and measures. For instance, negative correlations based on negatively worded measures were reverse coded so that they would be comparable to positive correlations based on similar, but positively worded measures. Care was taken to refer to each study's specific survey items (when provided) before assigning a characteristic code to a variable in an effort to avoid confusion of terminology across numerous researchers.

POTENTIAL FINANCIAL OUTCOME COVARIATE FACTORS

The variance in effect sizes reported in the literature suggests that one or more measurement features could be contributing to the differences in correlations. In other words, the relationship between performance and its determinants could be either augmented or mitigated by one or more aspects of how the respective factors were measured or by how the study was conducted. As such, a calculation of simple mean effect sizes is insufficient in fully accounting for the variance in results across studies and provides the reader with a restricted understanding of the relationship in question. While attenuating factors such as the effect of sample size and scale reliability on the results can be accounted for using common meta-analytic techniques, some variance in results typically remains even after correcting for these factors (Brown and Peterson 1993). The existence of remaining variance would indicate that other factors are contributing to the differences in across-studies results and the likelihood of this occurrence necessitates that potential moderating variables be accounted for and coded in the empirical review.

Montoya-Weiss and Calantone (1994) profess that until important moderator (i.e., covariate) variables, study characteristics or methodological issues are addressed, the innovation field of research is unlikely to progress further. Table 4.1 highlights the potential covariate factors that are accounted for in this study. The covariates are the level at which performance was measured, the criteria used for assessing performance, the type of good examined and the managerial level of the respondent. Only those factors explicitly stated in each study were coded and no assumptions regarding categorization were made in any instance. The sample size for each factor is noted in the table. The rationale for including each of these factors in the search for potential moderating variables is explicated next. In a subsequent section of the study, these factors will be analyzed to determine any impact that they may have upon across-studies results variance once variance due to attenuation is accounted for.

Performance Measures

One of the more varied and impactful of the potential moderating factors is the variability in how the performance measure is captured. Griffin and Page (1996) note that this inconstant use of performance measures makes it difficult to draw generalizations across studies. Table 4.1 indicates that there are two broad measures of performance that emerge from the literature: (i) a single scale measure and (ii) a multi-item scale measure (i.e., consisting of summed measures such as share, sales and profits, for example). Within the single scale measures, however, the particular scale used also varies across studies and presents another level of challenge and analysis to more accurately interpret the study results. On one hand, the use of a multi-item scale may be superior to a single scale measure in that it captures a range of performance measures and is more generalizable due to the relative nature of the measure. For instance, a single item scale can be criticized as too narrow and idiosyncratic. Profit measures, as an example, at a Fortune 500 firm

are likely to differ in meaning from a smaller, regional firm thus eliciting non-generalizable results. Conversely, a general assessment of a multi-item scale is a relative measure and potentially more generalizable across differences in firm size and industry types.

TABLE 4.1

Selected Covariates Identified in the Innovation Literature

Performance Measure [a]		***Respondent Level***	
Single Item Scale	249	Project Mgmt.	376
- ROI	28	Senior Mgmt.	190
- Sales	83		
- Share	36		
- Profit	102		
Composite Scale	275		
Decision Criteria Basis		***Type of Good***	
Objective	311	Service	90
Subjective	448	Product	652

Note: Only factors that were explicitly stated in the original manuscripts were coded – no assumptions were made. Sample size is noted to the right of each variable.

[a] ROS, ROE and ROA were originally coded, but dropped due to inordinately low n's.

The aggregation of results in a multi-item scale, however, is subject to critique in that equal weighting to each subsumed measure fails to uncover any bias in the respondents' decision-making heuristic. Despite the potential lack of generalizability, a single scale item is arguably a more precise measure of true performance in that it is a more objectively focused measure. Among the choices of single scale measures used in the literature are return on investment (ROI), return

on sales (ROS), actual sales, market share and profit. A confound that arises, with respect to the moderating effect of the measure of performance, is whether the individual single scale measures of performance can be credibly aggregated into a single item scale category (for ease of analysis). The alternative would be to analyze each scale separately; yet, given that each of the scale's base calculations contains a 'sales' component, it is questionable whether additional and useful information is uncovered by the disaggregation.

Decision Criteria Basis

A great majority of evaluations of product performance in the literature are subjective in nature. While a comparison of the covariate impact of objective versus subjective assessments of performance would seem a worthwhile endeavor, the one-sidedness of the assessments prohibits this comparison. Still, thoroughness requires that multiple potential covariates be investigated so that a full picture of the relationships can result. In this light, a further covariate factor that will be explored is whether or not the subjective assessment is based upon either objective or subjective input data. An assessment of performance based upon "feelings about how well a product performed" or how well it performed "versus expectations" could realistically differ from a subjective assessment based upon market share or sales figures. Hence, the basis for performance decision criteria will be examined as to its impact on performance evaluations.

Respondent Level

The potential covariate effect that the level of the respondent may have on the performance effect size is also addressed. Most studies collect information regarding performance from either senior management or project-level management. Montoya-Weiss and Calantone (1994) note that no study has investigated the differences between senior management's and project-level management's perceptions of performance. While the degree of internal corporate

communication may vary in intensity and effectiveness across firms, it is feasible that those most responsible for the launch of an innovation (i.e., project management) may have a different evaluation of performance than those most responsible for the funding (i.e., senior management) due to differences in perspective. Thus, the covariance of the respondent level is addressed as well.

Type of Good

While the innovation literature is weighted toward product-related research, service-related research is gaining in interest. Differences in results across products and services are possible, given the inherent nature of the respective offering types. The growing strength of the services industries in the global economy calls for an investigation into potential differences in findings across service products and tangible products. It is quite possible that the direction and degree of effect size for a given determinant of performance would vary by whether the product offered was an automobile or a financial service, for example. Thus, an examination into the impact that the type of offering may have on performance relationships is warranted.

META-ANALYTIC FINDINGS

This section of the dissertation centers on the quantitative analysis of the relationships between the determinants of product performance and the actual measure of marketplace performance. Descriptive statistics outlining the determinant-performance relationship are initially presented. The manuscript then proceeds with increasingly detailed statistics. The intent is to offer insights into the central tendencies of the individual correlates with innovation performance after adjusting for sampling error and study artifacts across studies. The next step in the data analysis focuses on the multivariate analysis of the correlations. The objective of this step is to offer a simultaneous test of the effects of the classical predictors of performance on estimates of

relationship strength. Distinguishing the determinants by their unique contribution to the estimates of the correlations with performance is the intention of this analysis. The final step in the data analysis attempts to identify the sources of effect size variance in the estimates of relationship strength, notably, factors other than sampling error and variation in the reliability of the measures.

These discussions also emphasize the individual correlations reported for the model (individual-level analysis) rather than the average of the correlations reported within a study (study-level analysis). An individual-level analysis is consistent with the approach advocated by Glass, McGaw, and Smith (1981) and is utilized by various researchers in the marketing literature (e.g., Churchill et al. 1985; Szymanski and Busch 1987). Moreover, the decision to focus on the individual correlations is grounded in methodological criteria. Namely, the respective covariates in the study are categorical and often vary across models within the same study. In such situations, an individual-level analysis is advocated as more appropriate for ensuring that all the potential moderator effects have been coded and captured in the database (Matt and Cook 1994). Further, an individual-level approach is the appropriate approach when the correlations for the same pair of correlates are heterogeneous within the studies.

Descriptive Statistics

Table 4.2 denotes the descriptive statistical information for each of the determinant-financial outcomes relationships. The number of correlation pairs (i.e., number of r values) is noted as is the range of values and the directional hypothesis previously stated for each pair. The number of studies that report the effects is also noted. The data in Table 4.2 portrays the diverse findings on the determinants of new product performance effects reported in the literature. For instance, the data reveal that the range of reported values are both broad and mixed. As examples, the correlations for product advantage with performance range from -.31 to .81, the values of the

correlations for order-of-entry with performance range from .10 to .94 and the values of the correlations for cross-functional integration with new product performance range from -.05 to .39.

A closer review of the data in Table 4.2 also accentuates where quantitative research attention in the literature has been focused. For example, of the correlates captured for product characteristics, 15 studies and 44 of the 97 effect sizes (45%) focus on product advantage while more specific product components such as price and degree of innovativeness have been of lesser relative focus. Likewise, among firm process determinants, both the impact of a structured NPD approach and cross-functional integration have received notably more empirical attention while reduced cycle time effects have received comparably less empirical scrutiny. Also, of the correlations in the database, only 54 (8%) pertain to the impact of marketplace characteristics on performance. In contrast, 370 (56%) correlations pertain to firm process characteristic effects on new product performance. In all, these data suggest both the preponderance of studies addressing the determinants of new product performance and the mixed evidence on the magnitude and direction of the role that these factors actually play in performance assessments. These data raise questions as to whether the variance in the magnitude and statistical significance of the reported correlations observed across studies and their models result from chance, sampling error, or differences in measures or methods. These questions are addressed subsequently.

TABLE 4.2
Simple Statistics for the Determinant-Financial Outcome Relationships

Determinants	Range of r Values	No. of r Values	No. of Studies
Product Characteristics			
Product Advantage	-.31, .81	44	15
Product Meets Customer Needs	.25, .78	10	4
Product Price	.11, .64	14	5
Product Technological Sophistication	.20, .90	12	5
Product Innovativeness	-.62, .81	17	6
Firm Strategy Characteristics			
Marketing Synergy	-.02, .71	61	12
Technological Synergy	-.73, .68	25	7
Order-of-Entry	.10, .94	16	7
Dedicated Human Resources	.00, .70	13	4
Dedicated R&D Resources	-.19, 1.0	30	3
Firm Process Characteristics			
Structured Approach	.00, .43	53	17
Pre-development Task Proficiency	.19, .76	29	6
Marketing Task Proficiency	.10, .72	40	6
Technological Proficiency	.16, .66	14	5
Launch Proficiency	.04, .66	19	7
Reduced Cycle Time	.00, .44	20	6
Market Orientation	-.13, .73	60	13
Customer Input	-.21, .81	16	10
Cross-functional Integration	-.05, .58	41	15
Cross-functional Communication	-.14, .39	58	4
Senior Management Support	-.07, .46	20	6
Marketplace Characteristics			
Likelihood of Competitive Response	-.60, .05	12	4
Competitive Response Intensity	-.72, .63	19	10
Market Potential	.21, .62	23	6

Central Tendency Statistics

Three estimates of the mean correlation are reported in this analysis: the simple mean, the sample-size corrected mean (the mean corrected for sampling error or unsystematic variance in

effects due to differences in sample sizes) and the reliability-corrected mean (the sample size-weighted mean further corrected for systematic variance due to the variability in the reliability of the measures). Whenever possible, the reliability-corrected mean is the focus in this study. This emphasis on the reliability-corrected mean assumes that, *ceteris paribus*, correlations from larger samples that are estimated from more reliable data produce a mean correlation closer to the true population mean (Hunter and Schmidt 1990). Unfortunately, information on scale reliability is not consistently reported in the literature and thus, the reliability-corrected means cannot be estimated for all determinants. When the reliability-corrected mean cannot be estimated, the most accurate alternative estimate of the population mean - the sample size-weighted mean - is emphasized in the discussion.

Table 4.3 details the central tendency and variance statistics for the correlations between the respective determinants and new product performance. Each of the values for the three mean calculations are listed to more fully portray the impact that sampling error, sample size and reliability variations can have upon simple effect sizes reported in the literature. Additionally, the variance across mean values is listed for each correlate pair with variance accounted for by sampling error and reliability variation noted. A high percentage of remaining variance (after accounting for systematic variance) is indicative that covariate factors may be influencing the discrepancies in mean values across studies. Finally, calculations for availability bias are included to assess the potential impact of the *file drawer* effect. The availability bias numbers reported in Table 4.3 address this issue and represent the number of unlocated effects having null results that would have to exist to bring the adjusted mean down to a significance level of $p = .05$. Higher numbers of effects indicate that one can place greater faith in the significance of the adjusted mean value reported. The availability bias results yield a range from a low of 130 to a high of 7,196

unlocated effects needed to reduce the statistical significance level to p = .05. Given the extended efforts undertaken to locate relevant studies, it is unlikely that such large numbers of effects remain unaccounted for. Thus, one can have confidence in the significance of the values reported. Table 4.4 presents a synopsis of each of the bivariate hypotheses and results.

Product Characteristics. From Table 4.3, we see that all of the product characteristic determinants of NPD performance are statistically significant with the exception of product innovativeness. The effect sizes are moderate to large with product advantage and meeting customer needs posting the strongest relative correlations with performance at .48 and .50, respectively. The lack of statistical significance for product innovativeness is somewhat surprising yet may be a direct result of the wide range of values reported in the literature. The high remaining variance figure indicates that examination of potential covariate factors in addition to stronger theoretical underpinnings may shed light on the discrepancy. Consequently, while the correlational data does not support H_{4A}, the evidence is supportive of H_1-H_3 and H_{4B}.

Strategy Characteristics. Similar positive results are evident for the firm strategy characteristics. Order-of-entry (H_6) and the dedication of both human and R&D resources (H_7) to a NPD initiative posted the strongest relative results with effect sizes of .42, .52 and .45, respectively. Interestingly, technological synergy (H_{5B}), when adjusted for both sample size and reliability variation, is not statistically distinct from a null effect whereas marketing synergy (H_{5A}) is. Both types of synergy have similar magnitudes of effect size (.34 and .31) yet the noticeably higher variance in affect sizes for technological synergy across studies indicate that scale measurements for this factor may need to be refined in order to more accurately capture its impact.

TABLE 4.3
Central Tendency and Variance Statistics for the Individual Determinants of Financial Outcomes

Predictor	Simple Mean [a]	Sample-Size Adjusted Mean	Reliability Adjusted Mean [b]	Availability Bias [c]	Total Variance	Sampling Error Variance	Reliability Variation Variance	Remaining Variance [d]
Product Characteristics								
Product Advantage	.41 *	.46 *	.48 *	3,730	.044	.003	.002	.039 (88.6)
Product Meets Customer Needs	.49 *	.50 *	n.a. [e]	278	.029	.003	n.a. [e]	.026 (89.7)
Product Price	.38 *	.35 *	n.a. [e]	320	.024	.003	n.a. [e]	.021 (87.5)
Product Technological Sophistication	.48 *	.41 *	n.a. [e]	130	.058	.006	n.a. [e]	.052 (89.2)
Product Innovativeness	.19	.25 *	.24	n.a.	.147	.009	.000	.138 (93.9)
Firm Strategy Characteristics								
Marketing Synergy	.29 *	.26 *	.34 *	7,196	.021	.003	.001	.017 (81.0)
Technological Synergy	.27 *	.33 *	.31	n.a.	.089	.002	.001	.086 (96.6)
Order-of-Entry	.53 *	.42 *	n.a. [e]	195	.074	.006	n.a. [e]	.068 (91.9)
Dedicated Human Resources	.46 *	.52 *	n.a. [e]	235	.063	.005	n.a. [e]	.058 (92.1)
Dedicated R&D Resources	.47 *	.45 *	n.a. [e]	640	.097	.034	n.a. [e]	.063 (64.9)

TABLE 4.3, Continued

Predictor	Simple Mean [a]	Sample-Size Adjusted Mean	Reliability Adjusted Mean [b]	Availability Bias [c]	Total Variance	Sampling Error Variance	Reliability Variation Variance	Remaining Variance [d]
Firm Process Characteristics								
Structured Approach	.21 *	.21 *	.25 *	4,939	.013	.007	.001	.005 (38.5)
Pre-development Task Proficiency	.37 *	.38 *	.46 *	3,633	.017	.002	.008	.004 (41.2)
Marketing Task Proficiency	.39 *	.40 *	.50 *	5,663	.025	.003	.010	.012 (48.1)
Technological Proficiency	.34 *	.39 *	.43 *	999	.012	.002	.005	.005 (41.2)
Launch Proficiency	.40 *	.41 *	.43 *	835	.027	.002	.003	.022 (81.5)
Reduced Cycle Time	.23 *	.22 *	n.a. [e]	335	.019	.009	n.a. [e]	.010 (52.6)
Market Orientation	.31 *	.36 *	.43	n.a.	.061	.004	.002	.055 (90.2)
Customer Input	.33 *	.24 *	.43	n.a.	.073	.006	.002	.065 (89.0)
Cross-functional Integration	.19 *	.22 *	.23	n.a.	.021	.005	.001	.015 (71.4)
Cross-functional Communication	.07 *	.06 *	.09	n.a.	.009	.002	.000	.007 (77.8)
Senior Management Support	.22 *	.31 *	.27 *	479	.021	.003	.001	.017 (80.9)
Marketplace Characteristics								
Likelihood of Competitive Response	-.30 *	-.37 *	n.a. [e]	176	.035	.011	n.a. [e]	.024 (68.6)
Competitive Response Intensity	-.07	-.12 *	-.08	n.a.	.110	.003	.000	.107 (97.3)
Market Potential	.40 *	.36 *	.54 *	3,200	.017	.003	.001	.013 (76.5)

* $p < .05$

[a] Simple mean is the correlation across studies unadjusted for sampling error or study artifacts.

[b] Reliability adjustments are based upon the distribution of the reliabilities.

[c] *Availability bias represents the number of unlocated effects with null results (r=0) that would have to exist to bring the adjusted mean down to a significant level of p=.05.* "n.a." in this instance refers to the corresponding nonsignificant mean r making it unnecessary to estimate availability bias.

[d] Percentage of total variance remaining is in parenthesis.

[e] Predictor or criterion reliability estimates are not reported frequently enough across studies (n<2) to adjust the mean correlation for differences in scale reliabilities.

TABLE 4.4

Financial Outcomes Hypotheses and Bivariate Results

H_i	Empirical Finding
H_1: The association between the degree of relative product advantage and financial outcomes is positive.	Supported
H_2: The association between the extent that a product meets customer needs and financial outcomes is positive.	Supported
H_3: The association between the degree to which price perceptions are favorable and financial outcomes is positive.	Supported
H_{4A}: The association between the degree of product innovativeness and financial outcomes is positive.	Not Supported
H_{4B}: The association between the degree of product technological sophistication and financial outcomes is positive.	Supported
H_{5A}: The association between the degree of marketing synergy and financial outcomes is positive.	Supported
H_{5B}: The association between the degree of technological synergy and financial outcomes is positive.	Not Supported
H_6: The association between being a market pioneer and financial outcomes is positive.	Supported
H_7: The association between the degree of dedication of firm resources and financial outcomes is positive.	Supported
H_{8A}: The association between the use of a structured approach to a new product initiative and financial outcomes is positive.	Supported
H_{8B}: The association between the proficiency with which process-related steps are conducted and financial outcomes is positive.	Supported
H_9: The association between the degree of reduction in product development cycle time and financial outcomes is positive.	Supported
H_{10}: The association between the extent of firm market orientation and financial outcomes is positive.	Not Supported
H_{11}: The association between the extent of cross-functional integration and financial outcomes is positive.	Not Supported
H_{12}: The association between the degree of senior management support for NPD initiatives and financial outcomes is positive.	Supported
H_{13}: The association between the degree of competitive response activity and financial outcomes is negative.	Supported
H_{14}: The association between the degree of competitive response intensity and financial outcomes is negative.	Not Supported
H_{15}: The association between the extent of market potential and financial outcomes is positive.	Supported

Process Characteristics. The range and statistical significance across firm process characteristics is the most diverse among the four groups of determinants. Consistent with theory, having a structured approach to NPD initiatives (H_{8A}) is statistically significant with a moderate effect size (r = .25). Being proficient at various process tasks (H_{8B}), as expected, has a positive and statistically significant correlation with performance (all r's > .43). Likewise, senior management support of an initiative (H_{12}) and reduced cycle time (H_9) are shown to be positive determinants of new product performance (r = .27 and .22, respectively). After adjusting for measurement reliability, market orientation (H_{10}) is not statistically significant, although its effect size (r = .43) is among the highest in this study. High remaining variance for this determinant indicates that potential covariate factors, such as use of diverse measurement scales, may account for the lack of significance. Finally, neither cross-functional integration (H_{11}, r = .23) nor cross-functional communication (r = .09) are statistically distinct from a null effect size. These results may tie-in with the results for task proficiency noted above in that simply having cross-functional integration or communication is not sufficient for success – the interaction must be productive and proficient if it is to be useful.

Marketplace Characteristics. Results for marketplace determinants of performance provide a clearer indication of the central tendencies of association for the determinants. Both the likelihood of competitive response (H_{13}, r = -.37) and the market potential (H_{14}, r = .54) were statistically significant with the likelihood of response exerting a negative effect and market potential, in line with expectations, posting a positive effect. Competitive response intensity (H_{14}), distinct from response likelihood, was not found to be statistically significant at the .05 level possibly indicating that the existence of competitive action is more impactful on product performance than the degree to which the competitor responds. It should be noted, however, that

the variance across measures of response intensity is relatively high ($\sigma^2 = .11$) and that covariate factors may also account for the non-significance.

The determinant-performance relationships are presented in the preceding manner to be congruent with existing meta-analytic research on the topic of innovation so that comparisons of recent and past findings can be compared. However, while both the descriptive and central tendency statistical approaches are methodologically consistent with previous research efforts, both fail to provide insight into how each correlate pair may act in a multivariate setting. The next section examines the existing relationships when the determinants are analyzed in unison.

Multivariate Statistics

The available data on NPD performance permits two general approaches within the dissertation for analyzing the respective findings in a multivariate context. The first approach involves specifying the respective predictors as dummy variables and using the z-transformed correlations as the criterion variable in a multiple regression model. The other approach involves constructing a correlation matrix from the mean correlations that are available in the literature and using the matrix as input into a multivariate regression model. The resulting coefficients provide insights into the relative and unique contribution that several of the classical determinants of new product success have on performance levels.

To accomplish this end, each of the 24 determinants of performance were first operationalized as dummy variables and then regressed on the Fisher z-transformed values for the corrected correlational effect size in the manner prescribed by Hedges and Olkin (1985). Table 4.5 highlights the dummy variable regression model that was evaluated. In the model, the impact of determinants on the criterion effect size is examined. The dummy variable for each determinant were entered and regressed on the z-transformed r-value. In this manner, standardized regression

coefficients (β) can be calculated and determinants can be compared with regard to their respective magnitude and direction.

With respect to the construction of the correlation matrix and its input into a regression model, a review of the literature makes it readily apparent that the correlations for only a subset of the predictors of new product success are available for inclusion in the matrix. This is because few studies examine or report data on the interrelationships among the antecedents to new product success. What data is available, however, provides us with an opportunity to develop a correlation matrix (see Table 4.6, Panel A) for investigating the relationships among product success, product advantage, product innovativeness, marketing synergies, technological synergies, structured approach, market orientation, cross-functional integration and competitive response intensity. The findings from the estimation of the corresponding regression model having new product performance as the criterion are presented in Table 4.6, Panel B.

The findings from the dummy variable regression analysis are reported in Table 4.5. The data indicate that the performance correlation (grand mean = .28) is largest on average when product advantage is the focus of researcher attention. The coefficient for product advantage is both positive and statistically significant in addition to being the largest, positively signed standardized coefficient estimated for the model. The data in Table 4.5 also provide supportive evidence that pre-development task proficiency, marketing task proficiency, launch proficiency and market orientation individually exert a greater correlation with performance than the remaining predictors with respect to multivariate estimations of relationship strength. The statistical significance of these coefficients indicates that the relative strength of each individual relationship is statistically higher than the remaining predictors (cf. Cohen and Cohen 1983, pp. 194-6) and is not an indicant of distinction from a null effect. Furthermore, the relatively low

TABLE 4.5
Standardized Regression Coefficients for the Determinants of Financial Outcomes

Dummy-Coded Determinant	Standardized Coefficients
Main Effect Factors	
Product Advantage	.23 (.13)[a]*
Product Meets Customer Needs	.12 (.25)*
Product Price	.07 (.20)*
Product Technological Sophistication	.06 (.31)*
Product Innovativeness	.01 (.25)
Marketing Synergy	.04 (.11)
Technological Synergy	.10 (.13)*
Order-of-Entry	.07 (.28)*
Dedicated Human Resources	.12 (.26)*
Dedicated R&D Resources	.05 (.43)
Structured Approach	-.02 (.15)
Pre-development Task Proficiency	.16 (.12)*
Marketing Task Proficiency	.16 (.13)*
Technological Proficiency	.11 (.17)*
Launch Proficiency	.14 (.16)*
Reduced Cycle Time	-.01 (.24)
Market Orientation	.14 (.12)*
Customer Input	.00 (.23)
Cross-functional Integration	-.02 (.14)
Cross-functional Communication	-.28 (.10)*
Senior Management Support	.05 (.16)
Likelihood of Competitive Response	-.19 (.35)*
Competitive Response Intensity	-.27 (.16)*
Market Potential	.10 (.15)*
R^2 (Adj.)	.42 (.40)
Model p-level	$\leq .05$
Max. VIF	2.13

* Statistically significant at $p \leq .05$.

[a] Standard errors are in parentheses.

TABLE 4.6
Correlation Matrix and Multiple Regression Results for Selected Predictors of Financial Outcomes

Panel A. Correlation Matrix [a]

	1	2	3	4	5	6	7	8	9
1. Product Advantage	--								
2. Product Innovativeness	.26	--							
3. Marketing Synergy	-.12	-.29	--						
4. Technological Synergy	-.20	-.27	.44	--					
5. Structured Approach	.16	-.07	.36	.22	--				
6. Market Orientation	.37	.10	.32	-.06	.45	--			
7. Cross-functional Integration	.31	.16	.20	-.06	.36	.50	--		
8. Competitive Response Intensity	-.08	.03	.04	.16	.01	.09	.04	--	
9. Performance	.48	.24	.34	.31	.25	.43	.23	-.08	--

Panel B. Multiple Regression Results

Predictor	Standardized Coefficients (β) Model 1	Standardized Coefficients (β) Model 2
Product Advantage	.44 (.07)*[b]	.43 (.07)*
Product Innovativeness	.30 (.04)*	.29 (.04)*
Marketing Synergy	.26 (.11)*	.24 (.11)*
Technological Synergy	.42 (.05)*	.41 (.05)*
Structured Approach	-.07 (.14)	---
Market Orientation	.27 (.07)*	.21 (.06)*
Cross-functional Integration	-.08 (.10)	---
Competitive Response Intensity	-.15 (.04)*	-.15 (.04)*
R^2 (Adj.)	.59 (.57)	.58 (.56)
F (p-level)	29.40 (< .01)	31.64 (< .01)
Max. VIF	1.83	1.61

[a] While a *vector* of predictor-performance correlations is available for the 24 predictors of new product performance (see Table 4.2), a complete 24x24 *matrix* of correlations among all factors cannot be developed because data for many of the correlations among the predictors are not available from the literature. Hence, only those factors for which a complete matrix is available are listed here.
[b] Standard errors are in parentheses and statistical significance is based on the median sample size of 149 on which the individual correlations are based.

mean correlations for cross-functional communication and competitive response intensity evidenced in Table 4.3 argue for the possibility that these two factors may have a strong mitigating effect on estimates of performance correlations. This supposition is confirmed in the data reported in Table 4.5. The coefficients for cross-functional communication and competitive response intensity are not only negative and statistically significant; they are the two largest coefficients (in absolute terms) among the predictors captured in the model.

From Table 4.6 we see that this relatively parsimonious model of new product success accounts for the majority of the variance in new product performance, specifically, nearly 60% of the variance. We also find that all determinants, with the exception of structured approach and cross-functional integration, are statistically significant predictors of new product performance. Among the remaining six factors that are statistically significant, product advantage ($\beta = .44$), technological synergies ($\beta = .42$) and degree of innovativeness ($\beta = .30$) appear to have the largest effect on new product performance. This relative order of magnitude continues to hold even when the two statistically nonsignificant predictors from the first model (structure and cross-functional integration) are removed and the model is re-estimated (see Table 4.6, Panel B). Hence, these data suggest that a factor such as product advantage can be an important antecedent to success when captured in either a bivariate or multivariate context. The findings also imply that a relatively parsimonious model can apparently account for the majority of the variance in new product performance.

Covariate Analysis

In addition to offering insights into the central tendencies of new product performance relationships and the absolute and relative magnitude of these effects, this empirical investigation of financial outcomes seeks to provide insights into the possible sources for the variance observed

across the reported correlations. In Table 4.3, total variance in the correlations is partitioned into variance attributable to sampling error and to differences in the reliabilities of the measures on which the correlations are based. While sampling error and reliability differences do account for some portion of the total variance, the residual variance is still proportionately large. When the remaining variance is greater that 25% of the total variance, a search for additional factors accounting for the variance is deemed appropriate as the variance that remains is unlikely to be due to chance (Hunter and Schmidt 1990).

The situation with regard to the NPD performance correlations is one where between 52-97% of the variance in each of the respective mean correlations for new product performance is not accounted for by sampling error or reliability disparities and thus may be attributable to one or more covariate factors. This possibility is investigated using the dummy variable regression approach advocated by Hedges and Olkin (1985), whereby the z-transformed correlations provide the criterion variable and the noted method and measurement factors are dummy coded and specified as predictor variables in the model. These predictor variables are *type of offering*—product versus service, *respondent's position within the company*—senior management versus project management and two commonly used *performance measures*—(a) single-item versus multi-item measure and (b) objective versus subjective measure of success. The findings from this analysis are presented in Table 4.7.

From Table 4.7 it is evident that the respective method and measurement factors can play a statistically significant role in explaining the variance within the correlations reported for roughly two-thirds of the predictors of new product performance. Fourteen of the 21 models are statistically significant ($p \leq .05$); the variance explained within the 14 models by the respective method and measurement factors ranges from .12 to .79; and in eight of the models, the variance

TABLE 4.7
Regression Results for Covariate Analyses

Determinant--Performance Relationship	Single v. Multi-item Measure Beta (SE)	Objective v. Subjective Criteria Beta (SE)	Product v. Service Beta (SE)	Project v. Senior Management Beta (SE)	R^2 (Adj.)	p-Value	Max VIF
Product Advantage	-.49 (.36)*	-.05 (.23)	-.01 (.53)	.02 (.37)	.24 (.16)	≤ .05	1.50
Product Meets Customer Needs	.50 (.51)	n.a. [b]	.98 (.37)*	n.a. [a]	.69 (.60)	≤ .05	1.39
Product Price	.38 (.46)	-.28 (.67)	.64 (.34)*	n.a. [b]	.40 (.21)	> .05	1.37
Product Technological Sophistication	.65 (1.06)	.52 (.49)	n.a. [a]	1.19 (.95)*	.42 (.21)	> .05	3.57
Product Innovativeness	-.02 (.51)	.15 (.51)	.50 (1.09)	n.a. [b]	.24 (.06)	> .05	1.12
Marketing Synergy	.14 (.24)	.36 (.17)*	.24 (.21)	.04 (.57)	.19 (.14)	≤ .05	2.17
Technological Synergy	-.06 (.68)	-.19 (.40)	.10 (1.89)	n.a. [a]	.07 (.00)	> .05	1.25
Order-of-Entry	-.89 (.35)*	.74 (.73)	-.52 (.47)	-.02 (.64)	.75 (.66)	≤ .05	5.77
Dedicated Human Resources	n.a. [a]	1.20 (.78)*	-.35 (.81)	n.a. [a]	.79 (.74)	≤ .05	8.17
Dedicated R&D Resources	-.07 (.32)	n.a. [a]	.01 (.61)	.39 (.40)*	.15 (.06)	> .05	1.13
Structured Approach	-.21 (.17)	-.08 (.17)	-.36 (.18)*	-.46 (.19)*	.34 (.28)	≤ .05	2.27
Pre-development Task Proficiency	.39 (.71)	.08 (.16)	.30 (1.15)	-.11 (.45)	.12 (.00)	> .05	2.07
Marketing Task Proficiency	.29 (.27)	.19 (.19)	-.01 (.69)	-.57 (.21)*	.47 (.41)	≤ .05	1.65
Technological Proficiency	.53 (.47)	-.52 (.17)*	.04 (.86)	-.49 (.51)	.60 (.43)	> .05	2.71
Launch Proficiency	.06 (.29)	.32 (.19)	-.06 (.69)	-.64 (.29)*	.51 (.37)	≤ .05	1.22
Reduced Cycle Time	.15 (.64)	-.72 (.17)*	n.a. [a]	.33 (.63)	.60 (.52)	≤ .05	3.00
Market Orientation	.36 (.26)*	-.16 (.20)	.12 (1.00)	-.53 (.21)*	.42 (.37)	≤ .05	1.03
Customer Input	.69 (.61)*	-.09 (.64)	.16 (.58)	.56 (.74)	.53 (.36)	> .05	2.12
Cross-functional Integration	-.06 (.29)	-.61 (.17)*	-.16 (.25)	.20 (.26)	.33 (.26)	≤ .05	1.31
Cross-functional Communication	n.a. [a]	n.a. [b]	-.30 (.39)*	.18 (.67)	.12 (.09)	≤ .05	1.00
Senior Management Support	-.58 (.25)*	-.05 (.20)	-.31 (.73)	-.05 (.67)	.35 (.18)	> .05	1.22
Likelihood of Competitive Response	n.a. [a]	n.a. [b]	-.34 (.50)	.57 (.52)*	.50 (.39)	≤ .05	1.02
Competitive Response Intensity	.05 (.42)	-.39 (.35)	-.22 (1.31)	.42 (.46)	.33 (.14)	> .05	1.10
Market Potential	.78 (.22)*	-.20 (.13)	n.a. [a]	.22 (.39)	.56 (.49)	≤ .05	1.26

* Statistically significant at $p \leq .05$.

[a] Insufficient number of observations in one of the comparison groups to permit meaningful analysis.

[b] Variable was removed from the equation due to excessively inflated multicollinearity levels.

[c] The performance measure listed first represents the "0" dummy code while the second measure was coded as "1."

explained exceeds .50. What is also apparent from Table 4.7 is that, with the exception of the models for structured approach and market orientation, only one of the covariates plays a statistically significant role in explaining the remaining variance. There is no single factor that is statistically significant across all the models and the direction and magnitude of the respective covariate effects often turns out to be specific to the category of classical predictors that is being studied.

Of the possible covariates, respondent's level in the organization (project versus senior manager) emerges as a statistically significant moderator in most models. This factor is statistically significant for the models focusing on structured approach, marketing task proficiency, launch proficiency, market orientation and likelihood of competitive response. In four of the models, senior management data translates into weaker correlations. A similar mitigating effect is found when subjective versus objective data is used for capturing performance and the resulting performance data is correlated with reduced cycle time and cross-functional integration, respectively. An augmenting effect is evidenced when subjective data is used for gauging performance and performance is correlated with marketing synergy and dedicated human resources, respectively.

Consistent with the literature arguing that products are distinct from services (e.g., Shostack 1977), the findings reported in Table 4.7 support the notion that the nature of the offering can have a significant mitigating effect on the magnitude of the correlations. Specifically, for the correlations estimated for success with structured approach and success with cross-functional communication. Whether the offering is a product or service apparently also has an influence on the estimate of the correlation between new product success and meeting customer needs. Finally, the data indicate that using a composite measure to capture performance results in

inflated correlational values, on average, for success with market orientation and success with market potential but that mitigating effects are again evidenced. On average, the correlations for success with order-of-entry and success with product advantage are lower when researchers use a multi-item versus a single-item scale for measuring performance.

These data document that a substantial proportion of the variance in the correlations results from factors other than sampling error and differences in the reliability of the measures. In select instances, the measurement factors captured explain an adequate portion of that variance. In other instances, these factors contribute relatively little in explaining the variance evidenced in the correlations reported for a pair of success correlates. These latter findings, in particular, point to the need for further theoretical and empirical research that identifies other covariates as well as research that models innovation in different ways.

EMERGING AND IDIOSYNCRATIC PARADIGMS OF INNOVATION

While the chapter has thus far dealt with the dominant determinants of performance, the exhaustive attempt to uncover all studies of relevance uncovered additional potential determinant factors. Although the sample sizes are too small to afford their inclusion in the meta-analytic section of the study, these factors may lend insight into the overarching determinant-performance relationship as well as indicate areas of future emphasis for both managers and researchers. Hence, in an effort to make this dissertation as exhaustive as possible, attention now briefly turns to some emerging and idiosyncratic paradigms of innovation.

Table 4.8 depicts those determinant factors that had an insufficient number of effects to be included in the main study, but that may be of interest to the innovation research community. The data in Table 4.8 indicate the number of effect sizes and associated number of studies for

each determinant. All mean effect sizes are sample-size adjusted figures except where noted. Due to the low number of effect sizes associated with each determinant-performance pair (i.e., $n < 10$), estimates of availability bias and variance explained and remaining are excluded, as interpretation would be speculative at best.

TABLE 4.8

Descriptive Statistics for Emerging and Idiosyncratic Determinants of Financial Outcomes

Determinants	Adjusted Mean	Range of r Values	No. of r Values	No. of Studies
Product Quality	.40*[a]	-.36, .79	6	5
Product Flexibility/Customization	.25*	.04, .63	4	4
Market Growth Rate	.35*	.02, .60	9	6
Generation of New Ideas	.26*	.04, .43	5	3
Use of External Facilitators	-.02*	-.11, .05	8	1

* Statistically significant at $p \leq .05$.

[a] Reliability-adjusted mean indicated.

Product Quality

Product quality refers to the perceived quality benefits and superiority of a new product over that of a competitive offering (Atuahene-Gima and Ko 1998). While conceptually linked with product advantage and, perhaps, consciously subsumed under a product advantage construct, there has been a small amount of research effort directed at teasing out the singular effect of quality on performance. Among the five studies that empirically examined this relationship, the

adjusted mean correlational value is positive and relatively moderate in size (.40, $p \leq .05$) with a fairly tight range of values. Given the broad-based statistical significance of the product characteristics determinants (see Table 2.1) examined earlier as well as the data available for product quality, it is clearly evident that certain product characteristics are key drivers of innovation performance. Atuahene-Gima and Ko (1998) posit that market oriented firms, given their higher likelihood to solicit customer input into the NPD process, are more likely to produce products or services that are perceived by customers to be of superior quality. This tie to market orientation broadens the research agenda for product characteristics by coupling a product characteristics determinant with a process characteristics determinant. Hence, expanded examination into the nuances of product characteristics may yield greater insight into the product dynamic at work.

Product Customization

Derived from the degree of flexibility incorporated into the NPD initiative that allows a firm to customize its products to customer-specific requests, product customization has been a focus of some research since the mid-1990s. While certain CEOs rate product customization as one of the least important drivers of performance (Calantone, Vickery, and Dröge 1995), other research indicates that product customization is among the most important measures of a new product venture (Mishra et al. 1996) and that it has a positive and moderate impact on performance (Cooper and Kleinschmidt 1993). While the range of effect sizes noted for product customization is consistently positive, the relationship of customization-performance has been of minor importance when compared to the overall emphasis of the studies from which these effect sizes were obtained. Therefore, researchers interested in increasing comprehension of this

performance determinant would be well served to design a study in which the customization level of the product or service was the locus of interest.

Market Growth Rate

Market growth rate is conceptually intertwined with market potential, which has a positive and statistically significant (excluding the full effects model, Table 4.5) relationship with performance. Therefore, the market growth rate effect sizes reported in Table 4.8 are generally consistent with bivariate relationships found for market potential. When market demand is growing, it is easier for firms to acquire and retain customers thus, increasing profits (Cooper 1984b). For service firms, services targeted at high growth markets are found to be three times as successful as those directed at slower growth markets (Cooper and de Brentani 1991). Intuitively, though, the positive impact of market growth on performance may naturally lead to an eventual negative impact. Namely, higher market growth rates are likely to attract increasing numbers of competitors. This dissertation demonstrates that the likelihood of competitive response has a negative and statistically significant effect on performance. Thus, the positive impact of market growth may be short lived, depending upon the competitive environment, the nature of the good or any number of other potential moderating factors.

Generation of New Ideas

There is an ironic and noticeable lack of investigation focusing on the ability - or lack thereof - of a firm's employees to generate new product ideas. The generation of new product ideas is arguably the first step in the NPD process yet, we know little about its dynamics (Troy, Szymanski, and Varadarajan 1999). What little empirical research that exists indicates that firms with relatively more successful new product performance records undertake both idea generation and idea screening efforts to a greater degree than their less successful counterparts (Barczak

1995; Cooper 1984a). Although the number of effect sizes reported here is small, initial indications are that idea generation has a positive and relatively moderate impact on innovation performance.

Use of External Facilitators

While the results presented in Table 4.8 are based on a single study (Ittner and Larcker 1997), the question of how internally developed processes, technology, etcetera impact on performance in contrast to externally developed counterparts is an interesting one. The trade-off between development costs and trade secrecy is at play in this management decision. The common perception is that more successful firms are committed to internally developed innovation (Booz-Allen & Hamilton 1982). The mean negative effect size in the Ittner and Larcker study appears to initially substantiate this anecdotal view of the advantages of internal development. However, additional empirical investigation into the matter is certain to provide greater managerial insight. Further, the question of whether partialed-out aspects of internal versus external development differ in magnitude or impact has yet to be addressed by researchers.

While the volume of published research and working papers reviewed in the course of this study lends itself to a plethora of idiosyncratic yet interesting topics, space constraints do not permit an exhaustive discussion. The purpose of the preceding section was to highlight those areas of innovation research that have received an initial amount of attention, yet have not attracted sufficient research attention to be included in the meta-analytic portion of this study. It is hoped that this brief discussion whets the interest of both managers and researchers and inspires further investigative efforts.

DISCUSSION OF FINDINGS

The meta-analytical investigation of financial outcomes is inspired by the fact that product innovation is and will likely continue to be a leading driver in the quest for sustainable competitive advantage. The study is further motivated by the disparate empirical findings on innovation performance reported in the literature. Arguably, the conflicting nature of the findings complicates management and academic efforts to identify the critical and statistically significant determinants and moderators of performance. Examining all of the empirical data in sum, Tables 4.5 and 4.6 provide us with the best available forum for evaluating the implications of the determinant-performance relationships given that all determinants are evaluated simultaneously, thus overcoming a previous limitation in the literature noted by Montoya-Weiss and Calantone (1994). Further, Table 4.5 utilizes dummy regression variables to draw conclusions. While the regression results denoted in Table 4.6 provide us with a more thorough picture, the data is nonetheless based on a truncated correlation matrix. Though superior to bivariate methods of evaluation, a single study capitalizing on a consistent subject population would further aid in the interpretation of concurrent effects.

Among the issues that Chapters III and IV document are how wide the empirical disparities are in both the magnitude and nature of the reported findings. Notably however, the statistical significance of several of the mean correlations, plus the supportive evidenced offered in reference to the multivariate investigation of several of the determinants to new product success, provide data consistent with several principles advanced in anticipation of these effects. For example, the major determinants of new product performance tend to be market potential, dedicated human resources, meeting customer needs, marketing task proficiencies, product advantage, pre-development task proficiencies and dedicated R&D resources. The limited

multivariate model of performance (see Table 4.6) reveals that among those factors captured in a full correlation matrix, product advantage is again a prominent predictor of new product success. The issue of synergy remains open to debate. While technological synergy is statistically supported in both the dummy variable and the matrix regression, marketing synergy receives only bivariate support. The lack of multivariate support might be an indication that, on average, firms are more likely to introduce a successful product if they venture outside of their marketing comfort zone as some have suggested (cf. Cooper 1984a).

Perhaps the most unexpected finding in this study is the statistical non-significance of the impact of cross-functional integration on new product performance in both regression models and in the reliability-adjusted bivariate data. This is surprising in light of prevailing thought that greater integration results in a greater likelihood of new product success (e.g., Cooper and Kleinschmidt 1995; Souder 1981, 1988). Likewise, the significant and negative effect of cross-functional communication (see Table 4.5) was somewhat unexpected. It may be that inter-departmental interaction can be counterproductive if conducted in an inefficient manner. The input of R&D managers, for example, into a sales force execution of a new product rollout may prove ineffective. Alternately, it may simply be that *more* integration and communication are insufficient and that it is the *quality* of the interaction and communication that is critical. Construction of a more precise measure of integration or communication effectiveness may allow managers and researchers to more accurately interpret the value of cross-functional activities.

The findings with regard to the dominant drivers of new product performance further attest to the need for managers to incorporate these elements into their strategic decision models when contemplating or introducing new offerings into the marketplace. While logic would suggest that new products are more likely to be successful when there is significant potential demand for

the offering and the offering possesses meaningful advantages over other offerings currently available in the marketplace, the meta-analytic findings also document that having the requisite proficiencies in place and dedicating both human and R&D resources to the new product function are vital to the success levels that new products achieve. In other words, market potential and product advantages are necessary, but unlikely to be sufficient conditions for new product success. Managers must be cognizant of these additional relationships when emphasizing the innovation function as a key component of competitive strategy.

FUTURE RESEARCH DIRECTIONS

One benefit of this examination of the innovation market performance literature is that it provides both managers and researchers with a single reference point to help form a foundation for subsequent investigation. A benefit to managers is the opportunity to reduce the time and energy expended attempting to rectify disparate findings by providing a theoretical backdrop and the central tendencies of association regarding determinants of innovation performance. For researchers, this study provides an updated synthesis of the empirical innovation literature. By employing bivariate statistical techniques, a link is made between previous and current research findings. The use of multivariate methods is designed to overcome the shortcoming of bivariate analyses by analyzing determinants and covariates in a non-isolated fashion.

Chapter IV helps to solidify many previously held positions regarding the determinants of innovation performance. It also, notably in the multivariate analyses, sheds doubt on certain relationships. Additionally, the financial outcomes analysis highlights some emerging areas of study that may be of interest to innovation and new product researchers. The inclusion of the covariate analysis section further adds to existing literature reviews by proposing partial sources

of variation in effect size noted across studies. The results from this study point to the logical conclusion that there is ample room for research improvement in this field of study. It may be that new or more accurate measures of determinants are called for or simply that more information be obtained from consumers with less data (for certain determinants) coming from firm management. Results could also indicate that there is not a purely direct relationship between the determinants and performance.

In the following sections, select research directions are discussed in greater detail. These potentially fruitful avenues of research include attempts to develop alternate models of innovation that may improve upon the dominant direct effect framework. In addition to developing alternate models of innovation relationships, exploring alternate levels of analysis may provide beneficial insights while broadening the scope of innovation research.

Alternative Model Conceptualizations

Building on this last point, researchers might heed the call for investigations that take a decompositional approach to studying product innovation. Currently, few studies have sought to explicate the determinants of performance at each stage of the NPD process. Rather, the criterion of interest has repeatedly been a measure of the overall success or performance of new products (i.e., performance after idea generation and screening, marketplace assessment, production and launch). This research approach dominates the literature even though innovation success is widely recognized as a cumulative process in which proficiency and success at succeeding stages is the result of success at preceding stages of the process. Consistent with this perspective, an approach that identifies the keys to success at each stage of the process may have *a priori* value for developing a more comprehensive understanding of why certain new products eventually are more successful than others. The significant correlations found for pre-development, technological,

marketing and launch proficiencies offer data in support of a call to examine the antecedents to these and other new product related proficiencies.

Future research may also yield rich insights by explicating the interrelationships among the antecedents to NPD success in the genre of a contingency approach to studying new product performance. As the empirical evidence indicates, the dominant focus in the literature is on the main effects of product, firm strategy, firm process and marketplace characteristics on NPD performance. Few studies have examined the interrelationships among these elements or have modeled these factors as joint effects or interactions (see Atuahene-Gima 1995; Song and Parry 1997; Song, Montoya-Weiss, and Schmidt 1997; Song, Souder, and Dyer 1997 for exceptions). This absence of a contingency perspective can be characterized as somewhat surprising given evidence suggesting that contingency perspectives are richer perspectives for capturing strategic relationships and given the initial evidence suggesting that a contingency approach can add to understanding in a product innovation context (cf. Zeithaml, Varadarajan, and Zeithaml 1988). Moreover, the fact that variance across the reported correlations remains even after controlling for sampling error, reliability differences and method and measurement artifacts implies that other moderators of these relationships are present and need to be identified. Thus, modeling new product performance effects in a contingency framework has the potential to shed additional insights into the complexities of creating and marketing successful innovations.

Finally, researchers should also consider adopting a mediating approach to studying product innovation performance. While extant studies focus on capturing the direct effects of the various predictors on new product performance, it seems reasonable that the effects of innovation are more far reaching than market performance measures such as market share, sales or profitability imply. For example, it has intuitive appeal to say that people would want to work for,

consumers may want to buy from and competitors may avoid competing against highly innovative firms. Product innovation could have a positive effect on morale within a firm, facilitate the attraction and retention of talented employees, serve as a barrier to entry and an incentive for competitors to exit, and promote customer excitement and enthusiasm. Importantly, each of these outcomes has the potential to eventually translate into greater market share, increased sales or greater profitability, implying that many of the classical predictors of NPD performance may also exert an indirect effect on success levels. The overarching point is that the classical direct-effects model of new product performance may only capture a portion of a more complete and complex story that may include indirect effects, contingency effects and effects unique to one or another stage of the innovation process.

Alternative Levels of Analysis

The dominant empirical focus of new product development research-to-date is on the individual product and its subsequent market performance. Whether the research interest centers on processes, synergy, cross-functional integration or any other facet of innovation inquiry, the implicit design is to assess the impact of the respective antecedent on the product being introduced and interpret its ultimate marketplace performance. While this approach and focus is not in dispute, it may be somewhat myopic in certain respects. For instance, if a firm innovates relatively rarely, then a single-minded focus on individual product innovation (i.e., financial outcomes) may be appropriate. However, if a firm's competitive strategy calls for introducing a stream of new product introductions over time, a broader emphasis may be more appropriate. It is likely that the cumulative effect of introducing a stream of new products or product enhancements is a corporate reputation for being innovative. While the preponderance of innovation and new product research has centered on the impact that specific products have upon marketplace performance, less effort

has gone in to uncovering the impacts of a corporate reputation for product innovation (i.e., non-financial outcomes).

Given evidence (Aaker 1989; Hall 1992) that cultivating a reputation appears to be coveted by some senior managers and the emerging research noting the importance of corporate reputation as an intangible asset capable of generating competitive advantage (Fombrun 1996; Fombrun and Shanley 1990; Rao 1994; Weigelt and Camerer 1988), an academic investigation of the varying reputational impacts on the constituencies of a firm is warranted. A strong firm reputation for innovation could reasonably result in a reduction in consumer resistance to an individual product offering, the attraction and retention of innovative employees, and a hesitance by some competitors to enter the market. The limited amount of research that looks at the differing impact that product cues and corporate reputation cues have upon attitudes (e.g., Brown and Dacin 1997; Wansink 1989) provides an initial indication that the conceptualizations of individual product performance and firm reputation are discrete entities. While consumer views about a given product deal specifically with that product, views about the company and its reputation seem to center more broadly on the firm itself and involve a more intangible evaluation (Brown and Dacin 1997). Individual product views and firm reputation views held by individuals are thought to be discrete entities but are not considered to be unrelated (Aaker 1996; Dacin and Smith 1994). Just as firms compete via tangible and intangible resources, individuals apparently evaluate firms on both of these resources as well.

While the impact of a reputation for product innovation remains largely uninvestigated, the importance of reputation in general has not gone unnoticed by researchers. In recent case studies and national surveys (Aaker 1989; Hall 1992) company and product reputation ranked, respectively, as the two highest intangible resources thought to contribute to sustainable

competitive advantage. Across literature streams, a favorable reputation is thought to induce many benefits that accrue to the firm possessing the reputation. For instance, a favorable reputation is proposed to increase market share (Raj 1985), elevate consumer expectations (Schmalensee 1978; Shapiro 1983), deter competitive entry (Kreps and Wilson 1982; Milgrom and Roberts 1982), increase customer loyalty (Porter 1985) and enhance employee identification with the organization (Dutton, Dukerich, and Harquail 1994). Logically, repeated successful introductions of new products should lead to expectations by the various firm constituencies (e.g., consumers, suppliers, competitors) of continued innovation. This line of inquiry is investigated in Chapters V and VI.

LIMITATIONS

As is widely recognized in the meta-analysis literature (e.g., Hedges and Olkin 1985; Hunter and Schmidt 1990), a quantitative synthesis of data is constrained by the nature and scope of the original studies on which it is based and these limitations should be borne in mind when interpreting the findings presented here. First, not all of the studies reported correlations and not all the authors of these could provide any correlational data. As a result, some studies could not be incorporated into the meta-analysis and, while the essence of the extant evidence is captured, it is not captured in total. Second, the cross-sectional nature of the original studies delimits one's ability to make confident causal inferences. While time-series data would be most desirable for these purposes, they are unavailable in the original studies, and thus, a reliance on cross-sectional data for making causal inferences naturally exists in the product innovation literature. Third, the relationships reported in the original studies could be positively biased due to an over-sampling of results from *successful* firms. Firms that unsuccessfully innovate have likely exited the market and

therefore may be underrepresented in the included studies. Fourth, a meta-analysis is constrained to examining covariate elements that can be coded from the extant literature. The fact that the covariates that could be coded fail to offer a full accounting for the variance in the performance correlations indicates that additional measurement factors and/or contextual factors need to be modeled and reported in future studies on new product performance.

The dissertation continues with an explanation of the non-financial outcomes of a corporate reputation for product innovation on five firm constituencies: consumers, company employees, competitors, suppliers and the capital market. An exposition of each individual model follows a general discussion of the conceptual development steps taken to build the respective constituency models. Relevant theoretical and empirical evidence is presented for each relationship. Hypotheses are subsequently generated for each of the predicted relationships. This discussion is then augmented by incorporating knowledge gained through qualitative executive interviews. Select constituency models (consumer and company models) are the subjects of empirical validation in Chapter VI.

CHAPTER V

CONCEPTUAL DEVELOPMENT, QUALITATIVE REFINEMENT AND HYPOTHESES FOR NON-FINANCIAL OUTCOMES

The resource-based perspective of firm competition (Barney 1991) views both tangible (e.g., products, equipment) and intangible (e.g., reputation, tacit skills) resources of a firm as keys to competitive advantage. Likewise, consumer behavior research indicates that individuals may also evaluate firms on these facets when forming attitudes about the firm and its products (Brown and Dacin 1997; Wansink 1989). Thus, a better understanding of how firms can utilize tangible and intangible resources is of strategic importance. Chapters III and IV focus on the more tangible financial outcomes of innovation. In this chapter, research attention turns to an examination of the more intangible, non-financial outcomes of innovation. A conceptual framework for assessing the potential outcomes of constituency-specific (e.g., consumers, competitors) perceptions of a firm's reputation for product innovation (RPI) is developed. Five key constituencies of the firm are investigated: consumers, employees, competitors, suppliers and the capital market. Fostering a better understanding of how constituency-specific perceptions of a firm's RPI may impact their attitudes and behavior can result in more efficient and effective strategic decisions for approaching these constituencies in the quest for sustainable competitive advantage.

In review, the research questions for the *non-financial outcomes* section (Chapters V and VI) of the dissertation focus on the following:

- *What is a corporate reputation for product innovation (RPI) and how is it measured?*
- *What are the non-financial (e.g., consumers, competitors, suppliers) effects of signaling a corporate reputation for product innovation?*

CONCEPTUAL MODEL DEVELOPMENT

While reputation is proposed as a key intangible firm resource leading to competitive advantage (Fombrun and Shanley 1990; Rao 1994; Weigelt and Camerer 1988), the intangible nature of a corporate reputation makes it difficult to assess conceptually or empirically (Shenkar and Yuchtman-Yaar 1997). Despite calls to address the broad and changing role of organizational innovation (e.g., Crawford 1994; Kuczmarski 1994; Rubenstein 1994), the overt promotion of a public reputation for product innovation by certain firms (e.g., 3M), and the dearth of research investigating how reputation impacts multiple firm constituencies (Fombrun and Shanley 1990), little research has addressed the varied constituency outcomes of a firm's perceived reputation for product innovation. The lack of a foundation of research knowledge on these outcomes or their antecedents as well as the intangible nature of reputation may be two leading causes of the dearth.

The intent in this chapter is to apply relationships from theory and existing literature streams to gain an initial understanding of how a firm's reputation for product innovation may affect its constituencies. This study is, therefore, an exploratory step in developing a model of the non-financial impacts of a reputation for product innovation (RPI) on firm constituencies (see Figure 2.1). The chapter proceeds with a discussion of two relevant theoretical perspectives that are germane to fostering an understanding of the non-financial consequences of a firm's RPI.

Two theoretical perspectives – signaling theory (Spence 1973) and institutional theory (Selznick 1957) are appropriate to this investigation of the non-financial outcomes of innovation. The intangible nature of a firm's RPI means that it is difficult for individuals to assess without some overt form of communication. In essence, firms must use a variety of signaling techniques to communicate a RPI. Both signals and reputation are subject to decay unless there is reinvestment

over time. Institutional theory focuses on the interaction of multiple constituencies over time. Continued firm reinvestment in its RPI may have several environmental effects that are better understood by applying the principles of institutional theory. Both theories are discussed in greater detail in the following sections.

Signaling Theory

Signaling theory (Farrell and Saloner 1986; Milgrom and Roberts 1982; Nelson 1970, 1974; Olson 1977; Rao and Monroe 1989; Rao, Qu, and Ruekert 1999; Robertson, Eliashberg, and Rymon 1995; Spence 1973, 1974), while grounded in both the Marketing and Economics literatures, can be traced back to its economics roots in the work of Spence (1973). While Spence's work focuses on signaling in the job market, he notes that the applications for signaling theory can be applied to a variety of marketplace phenomena.

The premise of signaling theory is rather simple and straightforward. Firms are said to possess observable, unalterable attributes or "indices" (e.g., tangible resources) as well as other attributes or "signals" (e.g., intangible resources) that are subject to manipulation (Spence 1973). A further premise is the assumption that the environment is uncertain (i.e., imperfect information) in that individuals cannot readily obtain all salient information regarding the object of interest (Nelson 1974; Spence 1973). Spence (1973) regards signals, such as firm reputation, as parameters by which firms can shape the beliefs of individuals and therefore influence their behavior. Within the context of this dissertation, a corporate reputation is an intangible firm asset that is subject to manipulation (via signaling) by the organization. Given that the marketplace is inherently uncertain, a corporate promotion of its reputation can serve as a signal to influence constituent behavior.

Signaling is widely regarded as a rational corporate strategy to convey pertinent information to individuals. The inherent message signaled is likewise thought to be a reliable indicator since a false signal (e.g., promotion of a high-RPI by a low-RPI firm) makes the firm vulnerable to future economic sanctions (Rao et al. 1999). In other words, firms that signal false claims to constituents run the risk of damaging their past investment in corporate reputation as well as their future profit stream, to some degree. Economic models of reputation are based on the assumptions of imperfect market information where individuals make rational assumptions from signals derived from historical actions (Fombrun and Shanley 1990). Weigelt and Camerer (1988) presume a relationship between individual evaluations of a firm and the historical actions and future expectations of that organization.

Marketers interpret the promotion of corporate reputation as a "dissipative" signal that involves upfront firm expenditures that will be forfeited if the signal claims are later discovered to be inaccurate (Rao et al. 1999). The use of signals has been studied within the contexts of pricing aggressiveness (e.g., Kreps and Wilson 1982; Milgrom and Roberts 1982), product quality (e.g., Nelson 1974; Olson 1977) and retailer reputation (Dawar and Parker 1994; Rao and Monroe 1989). The appropriateness of signaling theory to this dissertation research is evident as a corporate reputation for product innovation is analogous to a corporate attribute that is subject to signal manipulation (Spence 1973) and is an intangible resource that can lead to extended firm profitability when effectively communicated to constituents (Fombrun and Shanley 1990).

Firms can use several methods to signal a high RPI to their constituencies including public relations, contests, sponsorship activities and advertising. By overtly signaling a high RPI to its various constituents, firms attempt to influence their behavior. Given previously presented evidence of the ability of signals to successfully communicate corporate information (e.g., strong

reputation for pricing aggressiveness = high market entry barriers) and the apparent value to managers in promoting a high RPI, a research investigation of the non-financial outcomes of a firm's perceived RPI is warranted.

Institutional Theory

With roots in Economics, Sociology and Political Science literature, institutional theory (DiMaggio and Powell 1983; Meyer and Rowan 1977; Powell 1991; Selznick 1957, 1996; Scott 1987, 1995), as it relates to organizations, is generally traced back to Selznick (1957) who postulates that, over time, organizations tend to acquire a unique character and achieve a distinctive competence. In essence, organizations can become *institutionalized*. Thus, institutional theory "traces the emergence of distinctive forms, processes, strategies, outlooks and competencies as they emerge from patterns of organizational interaction and adaptation" (Selznick 1996). These patterns are understood to be responses to both the internal and external environments of organizations.

Organizations face a number of externally generated pressures that influence both the structure and behavior of firms (Dacin 1997). Among these are broadly based socio-cultural norms and pressures arising from inter-organizational dependencies. In total, institutional pressures work in tandem with other forces such as competitive or market pressures to influence an organization's overall domain (Dacin 1997). What we observe from institutions is a dynamic interconnectiveness in which internal and external actions resonate to create a mechanism by which both individuals and organizations gradually conform to socially constructed norms (Berger and Luckmann 1966).

The institutional view of the firm goes beyond mere occupation with corporate culture or firm competition to suggest that each organization impacts its *competitors*, the *broader industry*

and *society at large* and that the reverse impacts also hold. Essentially, the actions of all relevant players – both internal and external to the firm – are ultimately interrelated. Scott (1995) forwards an overarching definition of an institution:

> Institutions consist of *cognitive*, *normative* and *regulative* structures and activities that provide stability and meaning to social behavior. Institutions are transported by various carriers--*cultures*, *structures* and *routines*--and they operate at multiple levels of jurisdiction (p. 30, italics added)

One must be careful, however, not to envision an organization as an entity in and of itself. It is simply an aggregation of individuals. However, as an organization becomes institutionalized, individuals are theorized to begin to respond to stimuli in an increasingly singular fashion. On a cognitive level, individuals certainly construct their own social reality, but they do so within the context of pre-existing cultural systems. Despite their idiosyncrasies, most individuals remain dependent on their constitutive frameworks for their economic livelihood (Scott 1995, p. 41-2). This financial dependence and continued employment contributes to the process of institutionalization.

Normative pressures are present in any organization. Again, people will understandably retain their individuality yet a certain logic of appropriateness regarding contextual roles still applies to their social interactions (March and Olsen 1989, p. 21). Normative patterns of behavior can eventually lead to the routinization of individual behavior. Regulative structures such as goal setting, monitoring activities and reward/punishment additionally serve to influence individual employee behavior. In this regard, individuals are *directed* toward appropriate behavior. Organization theorists tend to emphasize one or another of Scott's (1995) three structures as the dominant perspective in how institutions are supported. In the multiple constituency context of this dissertation all three are influential structures.

While institutional theory focuses heavily on issues of inter- or intra-firm importance, the broader conceptualization of institutional theory as an interrelation of multiple constituencies (e.g., competitors, consumers, governments, society at large) (Powell 1991; Selznick 1996) makes the theory germane to this dissertation research. It is expected that the interaction between firms and their employees, competitors, suppliers and the public at large will, over time, result in distinctive outlooks that emerge from patterns of historical interaction (Avlonitis et al. 1994; Selznick 1996). A constituency-perceived corporate RPI can arise from this historical interaction as well as influence perceptions of relevant constituent players. Assuming that the perceived reputation is appropriately accurate, a firm's RPI will logically impact the actions of the constituencies with which it interacts. If firms reinvest in a positive reputation, it is likely to persist (barring unforeseen shocks to the environment) and help to *institutionalize* both internal and external patterns of behavior.

Integration of Signaling and Institutional Theory

Examination of purely tangible aspects is not the only basis on which firms are evaluated (Fombrun and Shanley 1990). Due to the imperfect information inherent in the marketplace, constituencies of a firm routinely rely on the reputation of a firm when forming perceptions and making judgments regarding investment decisions, product purchases, career choices or partnership opportunities (Dowling 1986; Fombrun and Shanley 1990). An intangible resource, such as reputation, can act as a signal to relay relatively unobservable information about the firm. Corporate reputations act as a signal, imparting information that allows firms to promote product quality (Nelson 1974; Olson 1977), erect market entry barriers (Kreps and Wilson 1982; Milgrom and Roberts 1982), charge price premiums (Klein and Leffler 1981) and shape individual's attitudes toward company products (Brown and Dacin 1997) among other outcomes.

Market signals impart information to constituents about a wide variety of firm activities. Just as firms compete for customers, they also compete for reputational status in the marketplace (Fombrun and Shanley 1990). In general, a positive reputation can help firms to achieve sustainable competitive advantage through providing them with some measure of differentiation (as perceived by its constituents) from competition (Hall 1992). Perrow (1961) proposes that firms can reduce their dependency on their environment by acquiring a reputation (i.e., "prestige"). Under the neoclassic economic view of the market as having perfect information and homogeneous assets, reputation would be an irrelevant concept (Fombrun and Shanley 1990). Under the resource-based view of the market (Barney 1991), with heterogeneous assets and imperfect information, a firm reputation can arguable provide some firms with a competitive advantage by signaling constituents about a firm's valuable intangible resources. As defined in this dissertation research, a firm that signals a high RPI is proposed to impart information of a track record of product innovations, an aura of creativity and a promise of continued innovative activity in the future.

Under institutional theory, as a reputation is signaled to constituencies of the firm over time, it may begin to influence the distinctive "patterns of organizational interaction and adaptation" and shape how the firm is viewed by others in its environment (Selznick 1996). Ultimately, reputational "ordering" determines the status of firms within their environment (Shrum and Wuthnow 1988). As signals about a firm's activities, achievements and fortunes diffuse throughout their environment, individual interpretations begin to aggregate into collective judgments that crystallize into the reputational ordering of firms within an industry (DiMaggio and Powell 1983). Any articulation of reputation as a construct should therefore anticipate the

multiple economic (i.e., financial) and non-economic (i.e., non-financial) criteria that different constituencies are likely to apply (Fombrun and Shanley 1990).

Given this discussion, it is plausible to expect that a firm that promotes a high RPI (as perceived uniquely by each of its constituencies) will, over time, shape each constituency's attitudes of and behaviors toward the firm through a process of reinvestment and institutionalization. It is further plausible to propose that competitors of the high-RPI firm may alter their competitive stances given the information signaled by the firm reputation and that consumers may be attracted to such a firm by the promise of new products. Existing and potential suppliers of the firm are also likely to be more attracted to the innovative firm given the promise of a continued stream of new product offerings. It is further plausible to expect a high-RPI firm to attract relatively more innovative employees and for investors to gravitate to such a firm given the perception that it will produce a stream of economic profits. It should be noted, however, that any corporate reputation is subject to decay if not reinvested in (Reed and DeFillippi 1990) and therefore vigilance is required to maintain the perception of the reputation if signaling activities are to be heeded and favorable institutionalization processes are to continue.

Constituency-specific RPI

As noted in Chapter II, reputation is a perceptual construct. As such, it is socially constructed (Berger and Luckmann 1966; Fombrun and Shanley 1990; Rao 1994; Shenkar and Yuchtman-Yaar 1997) which implies that the perception of reputation lies with the individual regardless of supporting or conflicting independent evidence. Just as different consumers perceive a firm's reputation differently, other constituencies may hold varying perceptions of a firm's RPI. This variance in perception applies to both inter- and intra-constituency perceptions. For example, while consumers may harbor a particular perception of a firm's reputation for product innovation,

competitors of or suppliers to the firm may hold a different perception of its RPI. Thus, when investigating issues of corporate reputation, one should refer to the perception of the constituency of interest (Fombrun and Shanley 1990). As such, discussions regarding each constituency's outcomes of a firm's RPI focus on the respective constituency's perceptions of a firm's RPI.

The inquiries that follow serve to lay the groundwork for future academic investigation of the outcomes of RPI and to introduce these non-financial outcomes to managers for their evaluation. A perceived reputation for product innovation has similarities across constituencies, yet each will have a unique perspective. Since reputation is earned after a historical consistency of action (Avlonitis et al. 1994; Fombrun and Shanley 1990), a reputation for product innovation implies a history of successful new produce introductions. Given that RPI is further viewed as a credible signal (Spence 1973), the 'promise' of future innovative activity is 'understood.' Finally, since a firm RPI emerges from its unique institutional setting, a general institutional view of the firm as a leader in product innovation is likely.

Therefore, firms with a positively perceived RPI are likely to have a track record of successful new products. They should be perceived as new product leaders on the cutting edge of product development. High-RPI firms are likely to be perceived as both creative and progressive with regard to product introductions and should instill expectations of future new product innovations. In this dissertation, RPI is conceptually perceived along a continuum from a high (i.e., strongly positive) reputation to a low (i.e., strongly negative) reputation. As with any reputational construct, RPI takes into account an individual's perceptions of, experiences with and expectations of a firm's product innovativeness (Weigelt and Camerer 1988).

In the following sections, constituency-specific discussions are presented regarding the proposed effects that a corporate reputation for product innovation has on the denoted

constituencies of the firm. These discussions serve to more fully explicate the relationships depicted in Figure 2.1 and act as an initial framework for empirical evaluation and future research development. The discussions are then augmented with insight gained from qualitative interviews with several senior managers.

CONSUMER IMPACT

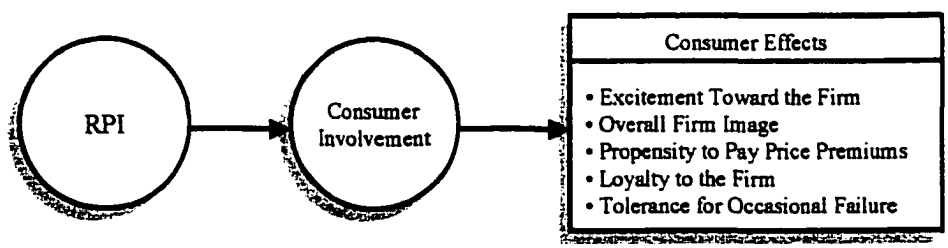
On a general theoretical level, the fact that a firm signals a high RPI to consumers may have several potential *non-financial* consumer outcomes. Given the adverse economic sanctions for firms that promote false signals (Rao et al. 1999; Spence 1973), consumers can arguably assume that the RPI signal is accurate. On this assumption, consumers may begin to form attitudes regarding the firm. A high consumer-perceived RPI has several implications. The reputation implies that the firm may be on the cutting edge of product development and that it is worthy of consumer attention. The implication of future new product introductions may serve to elevate consumer attention on the firm to a point where consumers actively anticipate the next product offering. In other words, the 'promise' of continued innovation could potentially lead to consumer excitement.

Further, a high-RPI signal, and the firm's capital expenditures promoting the reputation, may signal to consumers that products of the firm may be of high quality and relatively superior to competitive products. This inference could have the effect of simplifying consumer choice tasks by actively presenting the firm's products as inherently more valuable than alternatives. Assuming that the firm reinvests in its innovative capabilities and reinforces the high-RPI signal, institutional theory suggests that the interaction between the firm and consumers over time will result in a distinctive consumer outlook toward the firm. It is logical to expect that, as the original RPI signal

is confirmed over time, consumer attitudes toward the firm will begin to become routinized. A consumer's implicit expectations of the firm and its capabilities (e.g., product performance, customer service) should arguably heighten and solidify.

Figure 5.1 highlights the proposed relationships between consumer perceptions of a firm's reputation for product innovation, consumer involvement level and the subsequent consumer outcomes that arise from an application of principles from signaling and institutional theories and an examination of the literature. Each of the variables noted in the figure are subsequently defined and discussed with regard to their inclusion in the proposed consumer model. Hypotheses are then presented. Managerial views expressed in the qualitative interviews are then subsequently discussed.

FIGURE 5.1
The Consumer Impact Model of a Reputation for Product Innovation



Involvement. While firms can signal a reputation through various channels such as public relations activities and annual report data, advertisements are the most likely vehicle by which a firm will signal a high RPI to the consumer constituency. Within the context of advertising

research, the personal involvement level of individuals is a key construct by which researchers study the effectiveness of an advertising message (Greenwald and Leavitt 1984; Petty and Cacioppo 1981; Petty, Cacioppo, and Schumann 1983; Zaichkowsky 1985, 1994). In a similar manner, individual involvement level may be useful in determining the effectiveness of the high-RPI signal within the consumer constituency.

The involvement construct is conceptualized as either (i) a state – suggesting that an individual's involvement is *temporary* or occurs at a point in time, (ii) a trait – implying that the involvement level is enduring and *personally relevant* over time, or (iii) a process – suggesting that involvement occurs via either a staged or *cognitive elaborative process* over time. The conceptualization of involvement as an elaborative process has been criticized as inappropriate in that the noted stages of heightened cognitive processing are best modeled as the *result* of involvement (Antil 1984; Cohen 1983). Involvement is defined in this dissertation as personal relevance – an enduring trait over time (Greenwald and Leavitt 1984; Petty and Cacioppo 1981; Zaichkowsky 1985, 1994). While this definition is widely regarded as the generally accepted definition of the construct, another rationale for defining the construct as enduring and personally relevant, rather than a temporary state, is that involvement is conceptualized here as being constantly present but capable of being heightened or suppressed at different points in time (Bloch and Richins 1983; Zaichkowsky 1986). Such a conceptualization recognizes that consumer involvement is dynamic and, therefore, subject to change as antecedents to it change.

Bloch and Richins (1983) and Zaichkowsky (1986) categorize the antecedents to involvement into three factors: (i) *personal characteristics*, defined as a person's inherent value system along with their unique experiences; (ii) *characteristics of the object of interest*, defined as the perceived differences between the object and other similar objects; and (iii) *context of the*

situation, defined as the salience of the object to the individual. Changes in one or more of these antecedents may affect individual involvement levels, which, in turn, may impact consumer attitudes and behaviors (Zaichkowsky 1986; 1994). Given this categorization scheme, a firm's consumer-perceived RPI is arguably classified as an antecedent to involvement. The RPI construct clearly falls under the second antecedent factor, given that the high-RPI message is an attempt by the signaling firm to differentiate itself from competitors. RPI may also have some significance for the third factor as well. For example, if the products of the high-RPI firm are not salient to a consumer, then involvement with the firm's signals may be low (Zaichkowsky 1994). Given that consumers are heterogeneous and have multiple purchase options, the personal relevance of a firm's RPI signals are likely to be perceived across a wide range of involvement levels. Thus, it is reasonable to propose that different consumers may perceive a firm's RPI quite differently and that this range of relevance should be accounted for when assessing the consumer constituency.

While involvement is often operationalized as a moderating variable in assessing the impact of a stimulus (e.g., ad message) on consumer attitudes and behaviors (e.g., Petty and Cacioppo 1981; Petty, Cacioppo, and Schumann 1983; Park and Young 1986) it is operationalized here as mediating the relationship between a consumer's perceived RPI and the proposed consumer effects using a mediating conceptualization of involvement (Zaichkowsky 1986). The underlying rationale for this finds some support in signaling theory. By signaling a high-RPI, a firm implies that it will reinvest in its reputation. Thus, the reinvestment activities of the firm are likely to change the consumer's degree of relevance of the firm depending on how well the firm distinguishes itself from competitors (i.e., an *object* factor antecedent to involvement). As the high-RPI firm and consumers interact over time, the firm may engage a consumer's level of involvement by influencing their *personal* or *contextual* factor antecedents as well.

Some researchers (e.g., Bloch and Richins 1983; Zaichkowsky 1986) suggest that repeated product purchase, use and exposure are each antecedents of consumer involvement levels. In this view of consumer involvement, firms may actively influence the involvement levels of consumers with respect to their products. Thus, a history of NPD success (i.e., perceived via use and exposure) can directly influence involvement levels. More highly involved individuals have better attitudes toward advertising messages thus enhancing the chance of product purchase (Nelson, Duncan, and Frontczak 1985). Higher levels of involvement also correlate with higher levels of brand name recall (Petty et al. 1983) and result in product-specific (v. tangential) thought processes (Celsi and Olson 1988). Research on involvement has a large literature base and its effects on marketing phenomena are well documented. However, only a handful of studies investigate involvement in an innovation context (e.g., Bloch 1982; Clarke and Belk 1979). Viewing involvement, as a consumer characteristic influenced by firms, via advertising for example, is in concert with the previously advanced argument that corporate reputation is perceptual in nature. Individual involvement levels are dynamic and develop over time after several interactions with a firm (Zaichkowsky 1986). Similarly, the reputation of a firm develops over time after individuals observe consistency in a firm's actions (Avlonitis et al. 1994; Vendelo 1998). Yet, while researchers suggest various factors as antecedents of involvement, relatively few studies empirically test the relationship between these factors and involvement (Muehling et al. 1993).

Involvement, as defined and described above, is a likely antecedent to the proposed non-financial consumer effects shown in Figure 5.1. Research (mainly in an advertising context) indicates that more highly involved individuals are more likely than less involved individuals to actively engage in cognitively processing information related to the object of interest (e.g., Celsi

and Olson 1988; Park and Young 1986). It is probable that a consumer's perception of a firm's RPI does not directly impact the attitudes and behaviors presented in Figure 5.1. It is likely that a consumer's historical experiences with a firm, their perceived importance of that firm and their perceived differentiation of that firm among competitors are components of a reputation for product innovation that lead to the formation of consumer involvement levels. The resulting involvement level may then shape consumer attitudes and behavior. Firm actions over time (i.e., reinvestments) are the likely antecedents to a consumer's perception of its RPI. Thus, a consumer's perception of a firm's reputation for product innovation may impact that consumer's personal relevance level with regard to that firm. This involvement level can directly impact consumer behavior and influence how consumers react toward the firm and the products that it introduces (Bagozzi, Baumgartner, and Yi 1992).

Excitement Toward the Firm. From institutional theory, one can infer that firm reinvestment in signaling a high RPI is likely to result in a *distinctive* consumer outlook that emerges from patterns of historical interaction between the firm and consumers (Selznick 1996). For the company with a reputation for innovative products, customer excitement can arguably arise. Consumer enthusiasm/excitement for new product introductions by an innovative firm may induce both a feeling of anticipation for future firm offerings as well as an expectation of customer satisfaction given positive past performance. In other words, a consistent history of product innovations augmented by the perception of a high firm RPI will likely lead to a scenario where customers are excited and even inspired by the firm, are motivated to seek out new products from the innovative firm, and have a positive predisposition toward them.

Consumer attitudes toward a firm and its products form after exposure to the company over time (Fishbein 1963). The premise that the firm has developed a high RPI in the consumer's

mind indicates that the consumer has been exposed to the firm's products and that the RPI has been signaled in some manner (e.g., via advertising). Assuming a positive consumer perception of a RPI, the firm, by default, has a track record of successful (implies consumer satisfaction) new product introductions (Avlonitis et al. 1994). This consistency of successful NPD initiatives, as perceived by the consumer, and the 'promise' of future initiatives should heighten the personal relevance (i.e., consumer involvement) of the company and lead to a positive consumer outlook toward the innovator and its products. *Repeated* satisfactory product introductions, leading to increased consumer involvement level with the firm, can arguably lead to a consumer attitude that transcends satisfaction.

Product satisfaction alone rarely leads to consumer excitement. Deming (1986, p. 141) notes, "it will not suffice for firms to have customers that are merely satisfied." As such, firms must develop ways to excite customers. A fairly recent development in the customer satisfaction literature is the investigation into the foundations of customer *delight* as an extension of customer satisfaction. Customer delight roughly equates to consumer excitement and can be conceptualized as a function of a surprisingly favorable consumption experience, arousal and positive affect (Oliver, Rust, and Varki 1997). Oliver et al. further state that customer arousal only comes about in the presence of high levels of consumer involvement. It seems, therefore, that consumer delight (or excitement) may flow directly from relatively higher levels of involvement. A high consumer-perceived RPI could signal to consumers that the firm not only has a track record of NPD but that it holds the promise of continued innovation. Thus, a high RPI may serve as an enticement to consumers whereby the 'promise' of continued NPD might heighten the personal relevance of the firm and lead to consumer anticipation and excitement regarding the firm. It follows that

H_1: Consumer involvement mediates the positive relationship between consumer perceptions of a firm's RPI and consumer excitement toward the firm.

Overall Firm Image. Image enhancement is, perhaps, a complement to heightened consumer excitement. A positive firm image is defined here as the overall perception that the firm is generally perceived in a favorable light. The organization with a positive overall firm image is viewed as an industry leader that is well liked by consumers in general. Intuitively, each successful product launch (i.e., reinvestment in the signal) augments the image of the firm in the minds of consumers. Over time, consumers may begin to resolutely associate the high-RPI firm with product innovation via an institutionalization process. In many ways, the idea that consumers have an enhanced view of innovative firms relative to less innovative competitors ties to the behavioral perspective of first mover advantage (FMA) theory (Kerin, Varadarajan, and Peterson 1992). Pioneer, or first mover, firms are more resistant to competitor attacks (Carpenter and Nakamoto 1989) and enjoy less initial consumer resistance than later entrants (Peterson 1982). These outcomes may derive from increased consumer involvement levels. While cognizant of caveats such as survival bias (Kerin et al. 1992), definitional bias (Golder and Tellis 1993) and contingency effects (Szymanski, Troy, and Bharadwaj 1995) that surround a blanket acknowledgement of FMA as a market performance panacea, the advantages that generally accrue to the pioneering firm are applicable to this discussion. Market pioneers have a propensity to shape consumer perceptions, attitudes and behaviors given their unique position in the marketplace. High-RPI firms are arguably in a similarly perceived environmental position.

Carpenter and Nakamoto (1989) further propose that pioneering firms have a major influence on how consumers value product attributes (i.e., which ones become salient standards) and that pioneers are more likely to become the *de facto* standard within a category against which all other competitors are measured. In other words, if consumer preferences are ambiguous, consumers may view the pioneer's product as the category standard, thus further enhancing its

reputation. Obviously, the pioneering firm does not hold a patent on marketplace success. Later entrants, notably innovative late movers, are often able to redefine categories in the consumers' minds while outmaneuvering pioneers (Kerin et al. 1992; Shankar, Carpenter, and Krishnamurthi 1998).

A relatively high-RPI firm conceivably shapes consumer perceptions through signals and reinvestment in a manner similar to market pioneers. If a firm consistently and successfully introduces new products to the marketplace, a likely result is that the relevance (i.e., consumer involvement) of that firm for consumers increases. This increase is tied to the 'successful' (i.e., signals of a high RPI are accurate) nature of the introductions. With an increase in personal relevance arguably comes a more favorable predisposition toward the firm. A natural outcome of a heightened consumer disposition may be a more positive, or heightened, image of the innovative firm. In essence, it may be the ability to capture the *mindscape* of the consumer, regardless of entry position, that can lead to a global firm image enhancement and ultimate marketplace success. Perhaps it is this perceived ability of the innovative firm to psychologically engage consumers – via the RPI's influence on involvement – that may lead to an enhanced corporate image and the belief that others share this image. Hence,

H_2: Consumer involvement mediates the positive relationship between consumer perceptions of a firm's RPI and a consumer's overall image of the firm.

Propensity to Pay Price Premiums. The signal of a high RPI is logically an attempt by a firm to differentiate it from competitors and to engage consumer involvement levels via an *object of interest* factor (Zaichkowsky 1986). The ability to charge a price premium is arguably a strategic goal of the differentiation effort. The view that a high consumer-perceived RPI leads to greater consumer willingness to pay a price premium to competitive offerings finds support in the literature in that firms that move beyond mere satisfaction and subsequently delight or excite

consumers can command a price premium to competition (Cameron and Whetten 1983; Taher, Leigh, and French 1996). An interesting perspective in the pricing literature is that firms often treat consumer pricing decisions as a technical problem that must be dealt with rather than a creative marketing challenge to be met with insight into consumer motivations (Nagle 1983, 1984). The marketing viewpoint forwards the supposition that firms can manipulate pricing sensitivity among consumers. Further, a high consumer-perceived reputation for product innovation may be a tool to manipulate that sensitivity through its influence on consumer involvement levels. More highly involved individuals have, by definition, a positive predisposition toward a firm (Muehling et al. 1993). This positive predisposition arguably brought about after firm-consumer interactions over time, may allow firms to command a price premium to competitors that fail to induce equally high involvement levels (Cameron and Whetten 1983; Taher et al. 1996). An arguable consequence of greater involvement levels is a reduction in price sensitivity derived from an inherent increase in positive bias toward the innovative firm. Relatively more involved consumers develop a set of pre-existing beliefs (i.e., positive) about a firm. This is analogous to the institutionalization process whereby consumer behavior is influenced by a pattern of historical interaction (Selznick 1996). A high-RPI may signal that a firm's products are more valuable than competing products.

An exploratory model by Zeithaml (1988) posits that consumers view perceived product quality and value as distinct constructs and that a higher/lower level of abstraction with regard to product attributes influences purchasing decisions. Lower levels of abstraction can be defined as including product features or functional benefits whereas higher levels of abstraction deal with more complex personal issues such as emotional payoff or attitude. Consumer involvement levels are analogous to a higher level of abstraction in that they represent a latent attitude toward a

product or firm. RPI also corresponds to the higher level of abstraction. An enhanced personal involvement level, developed by a perceived high RPI, may positively bias a consumer's perceived product value and lead to a willingness to pay a price premium for that firm's products.

Some research views pricing from a spatial perspective (e.g., Nagle 1984) and proposes that consumers base pricing-related purchase decisions on the *distance* between their ideal or reference price and the shelf price. Other research notes that consumers have relatively low internal price reference knowledge (Zeithaml 1988) and spend little time cognitively processing price points or comparing prices of alternative brands (Dickson and Sawyer 1990). This view implies that consumers may be conditioned (i.e., institutionalized) to favor certain products regardless of price. If consumers process pricing decisions spatially, an innovative reputation may position an innovative firm (via higher involvement) as the spatial reference point against which others are compared in a manner similar to that of market pioneers. Research also indicates that consumers prefer to reduce the number of choices that need to be made (Sheth and Parvatiyar 1995). Thus, firms that are of greater relevance to an individual should reduce consumer comparison seeking behavior. Given this,

$\mathbf{H_3}$: Consumer involvement mediates the positive relationship between consumer perceptions of a firm's RPI and consumer propensity to pay price premiums.

Loyalty to the Firm. Fishbein (1963) states that consumer attitudes are automatically learned as one learns about a new product and that this learning occurs in the form of beliefs about product attributes. The resulting consumer attitude can be defined, therefore, as a learned disposition to respond in a consistently favorable or unfavorable manner (Fishbein and Ajzen 1975), which aligns closely with the institutional theory viewpoint. It is the inclusion of the term 'consistently' that may make research on attitude relevant to explicating the view that an innovative reputation leads to consumer loyalty. To maintain a high-RPI image, firms will reinvest

in activities that promote the reputation. As consumers experience a string of successful introductions, they may view the firm as a reliable source of product satisfaction. As the firm becomes more relevant to the consumer, heightened firm loyalty is a plausible outcome.

Dick and Basu (1994) gauge customer loyalty as the strength of the relationship between an individual's relative attitude and the degree of repeat patronage. The stronger a consumer's relative attitude toward a firm (i.e., the higher the involvement level), the less likely the consumer is to be swayed by appeals from competitive firms (Assael and Kamins 1989, Petty et al. 1983) and the more inclined they are to engage in a longer-term relationship with that brand/firm. This view of loyalty as the positive outcome of attitude fits well with the belief that consumer involvement level mediates the RPI-loyalty relationship. As attitude becomes central to the repatronage decision in a relational exchange, consumers may believe that an ongoing relationship (i.e., "commitment") with a firm is important enough to warrant maximum efforts at maintaining it (Morgan and Hunt 1994).

The relationship marketing literature offers further support for the belief that loyalty may be an ultimate consequence of an innovative reputation. A fundamental axiom of consumer-firm relationships is that consumers like to reduce choices by engaging in an ongoing loyalty relationship with marketers (Sheth and Parvatiyar 1995). The high-RPI signal by firms may communicate unobservable qualities about the firm and its products that allow consumers to simplify their choice-making task. The assumption in the Sheth and Parvatiyar definition is that consumers want to simplify their buying and consuming tasks, simplify their cognitive processing tasks and reduce their perceived risks in an attempt to maintain cognitive consistency. A history of successful reinvestment in the high-RPI signal and the 'promise' of future innovation may aid in this simplification and lead to greater consumer loyalty. Therefore,

H_4: Consumer involvement mediates the positive relationship between consumer perceptions of a firm's RPI and consumer loyalty to the firm.

Tolerance for Occasional Failure. Customer satisfaction research, specifically research investigating consumer comparison standards, sheds some light on what may appear, on first review, to be a counterintuitive proposition that consumer-perceived RPI leads to consumer tolerance for occasional product failures (via higher levels of involvement). Specifically, Woodruff, Cadotte, and Jenkins (1983) suggest that consumers may use experience-based norms as a standard for comparing between product performance expectations and actual product performance. Under such a model, expectations of product performance are based on a consumer's experience with a class of products or brands (Yi 1990). This experience occurs via interaction with a product (or firm) over time in the same manner that a corporate reputation for innovation develops (Avlonitis et al. 1994). Hence, the same signaling and reinvestment experiences that lead to the individual perceptions of a firm's RPI and subsequent involvement level may also shape individual expectations or attitudes via the institutionalization process.

Cadotte, Woodruff, and Jenkins (1987) test the experience-based model and find that an individual's comparison standards are based on their overall experiences with the brand being evaluated and with related brands over time. In essence, individuals develop an attitude toward a firm (i.e., personal relevance) after repeated experience with that firm and its competitors. Along these lines, consumers are posited to have "zones of indifference" regarding product performance evaluations (Miller 1979; Woodruff et al. 1983). When product performance falls within the zone, consumer product assessments are relatively positive. Given the knowledge that highly involved individuals are positively predisposed to a firm (Muehling et al. 1993; Petty and Cacioppo 1981; Petty et al. 1983), they should intuitively have *wider* zones of indifference and thus have a wider zone of acceptable performance for a high-RPI firm to psychologically engage. In essence, these

consumers are less likely to be dissatisfied with an occasional product failure from a firm to which they have a relatively high personal relevance.

Consumer assessment, modeled as the discrepancy between performance and some standard of expectation (cf. Oliver 1980), implies that the overall assessment may differ if different standards are being used – as is likely given the heterogeneity of the consumer population. For the failure tolerance assumption to be accurate within an experience-based model of assessment, the implication is that a reputation for product innovation shapes consumer perceptions (i.e., via involvement level). While expectations of performance from product initiatives of the innovative firm may intuitively rise over time, a history of successful product innovation (i.e., a high RPI) and the 'promise' of subsequent innovation may buffer the normally negative impact of an occasional market failure that results when actual performance falls short of expectations. This buffering is presumed to be an outcome of a relatively wider personal zone of indifference for the more innovative firm. Individual attitude influences consumer behavior (Bagozzi et al. 1992) and a positive predisposition in that attitude might soften consumer evaluations of a failed product performance relative to a competitive product. Hence,

H_5: Consumer involvement mediates the positive relationship between consumer perceptions of a firm's RPI and consumer tolerance for occasional product failure.

Qualitative Interviews: Consumer Outcomes

Given the exploratory nature of the investigation of the non-financial outcomes in this dissertation, qualitative analysis is undertaken to further explicate the relevant concepts. Namely, in-depth interviews with senior executives are conducted to provide additional insight regarding the hypotheses and to develop a more practical conceptual model. Numerous marketing scholars (e.g., Desphande 1983; Zaltman, LeMasters, and Heffring 1982) support this qualitative approach

to theory development. A detailed description of the method used for the qualitative interviews appears in Appendix A.

H_1: This hypothesis proposes that consumer excitement is an ultimate consequence of consumer perceptions of a high firm RPI. According to one company President interviewed, "a strong reputation (for product innovation) leads to a receptive audience." When asked about the potential effects that a firm's high RPI might have on consumers, several executives broadly propose that a strong RPI can lead to more highly *engaged* consumers. These managers further expect consumers of consumer-perceived high-RPI firms to become excited and to actively seek out and anticipate new product introductions. When asked for his opinion on the potential consumer outcomes of a high RPI, one Vice-President of Marketing thinks that consumers *want* to be excited by companies and will respond favorably to innovators:

> Frankly the consumer is [saying to the company] 'give me a reason to buy, create some excitement for me, tell me there's something new....'

A favorable disposition toward the innovative firm, brought about by its history of product innovation (i.e., high RPI), is likely to lead to consumer excitement in the opinion of many executives and is in line with expectations in H_1.

H_2: The second hypothesis proposes that a consumer's perception of a firm's RPI directly impacts their personal relevance toward the firm, which in turn, heightens their overall image of the firm. Across the interview sessions, overt promotion of an innovative reputation is mentioned repeatedly as a precursor to an overall enhanced corporate image. Several executives interviewed note 3M as an example of this image enhancing phenomenon. One manager views some 3M product introductions as less than innovative, yet notes that the consumers' perceived image of the firm is unshakably that of an innovator with each new 3M product possessing the mantle of innovation from introduction. A history of successful new product launches is thought to have

positively shaped the consumers' image of 3M. As one executive views the similar perception of Sony product offerings:

> Because they have a string of innovations or hits, everyone assumes that the next one is going to be equally powerful and potent.

Both a perceived resistance to competitive attacks and an anticipated reduction in consumer resistance to new product introductions were noted throughout the interviews as consumer outcomes with respect to firms with a positive reputation for product innovation. These views reflect a premise of institutional theory and imply that consumer perceptions of a firm's RPI may become positively biased over time.

H_3: Consumer's are hypothesized to be more likely to pay price premiums for products from a self-perceived high-RPI firm versus those from a firm with a relatively lower perceived RPI. Mentioned fairly often among the managers' anticipated benefits of possessing a reputation for product innovation is the belief that customers are willing to pay more for the innovator's products versus similar products offered by less innovative competition. In their opinion, having a high RPI allows firms to increase profit margins relative to competitors. Again, Sony Corporation is a noteworthy example from the executive interviews. When asked about his opinion of the consumer outcomes from a high-RPI firm, one manager states:

> Sony has done a great job in consumer electronics at convincing [consumers] that their products are smaller, are better and therefore are of *more value*. I don't know whether that is still true or not but, as a consumer, I have that perception.
>
> Business Development Leader

From the interview discussions, it is also apparent that a broadly held view of the managers is that a strong consumer-perceived RPI will motivate consumers to pay a price premium over what may be their mental reference price for a particular item. If this belief were substantiated, it would

allow more innovative firms (as perceived by consumers) to increase profit margins relative to less innovative rivals on the basis of the perceived innovativeness gap.

H_4: Consumer perceptions of a high RPI are hypothesized to ultimately lead to increased consumer loyalty to the innovative firm. In the executive interviews, cultivating a reputation for product innovation is cited by some managers as potentially important to heightening consumer loyalty to not only the firm's products but to the organization as a whole. By definition, more loyal consumers are less apt to purchase competing brands and more likely to remain brand loyal over an extended time. One of these managers believes that this loyalty even persists during difficult times for the firm and results from a consumer "connection" – both physical and emotional – with the firm over time. Several managers remark that having a track record of successfully introducing new products and thus developing a high RPI equates in many instances to consumers who, through repeated purchases of new products, become habituated to the innovator's products over time and gradually increase base purchases (as opposed to a 'cherry picking' new product purchasing pattern). The qualities of temporal consistency and leadership that are associated with an innovative firm may to assist in helping consumers to maintain cognitive consistency, thus heightening both the personal relevance of the firm and the probability of consumer loyalty. The inference throughout the interviews is that an innovative reputation is something that is viewed positively by consumers and that they, on average, will seek out the innovator's products.

H_5: Finally, heightened consumer involvement levels, resulting from a self-perceived high firm RPI, are proposed to influence consumer tolerance for occasional product failure from the high-RPI firm. An opinion on consumer tolerance for failure compatible with that expected from a theoretical perspective surfaces across the interview sessions with a belief by some executives that

a reputation for product innovation result in consumer tolerance for the occasional new product failure. One manager posits that while a less innovative firm may be penalized by consumers for a marketplace "flop," firms with a history of innovative offerings are "cut a little rope." Two inherent ingredients mentioned in his proposed tolerance are that the firm has historically been more successful than not at introducing marketplace successes and that consumers have previously developed a trust for the company. Both of these stated ingredients correspond with earlier theoretical and empirical discussions. When prompted for a view on the potential consumer-related outcomes of a high RPI, one manager's viewpoint aptly reflects the theoretical rationale for H_5:

> I really think there is this tolerance for failure and a willingness to work with you ... everybody understands that you didn't get it right the first time. But, what has to go along with that is that you have to be willing to do the right thing when you have an unmitigated failure.
>
> Vice-President of Customer Development

Notes another executive when commenting on potential impacts from a consumer-perceived high RPI:

> I think [consumers] are more forgiving (of a product failure) if you have a history and you have size. But, I think it is because your brand already has such a dimension in these people's mind. ... I guess that only works because you have built up a reputation and people fundamentally trust you.
>
> Vice-President of Marketing

In sum, the views expressed across the executive interviews appear to coincide with those suggested by theory and the associated empirical evidence found in the literature. Namely, a high RPI may act as a signal to manage consumer perceptions and expectations regarding the firm. Following through on the signal, with innovative new products, further shapes consumer attitudes

and behavior and normative outlooks emerge. The discussion now turns to an investigation of the proposed company-related outcomes of an employee-perceived firm RPI.

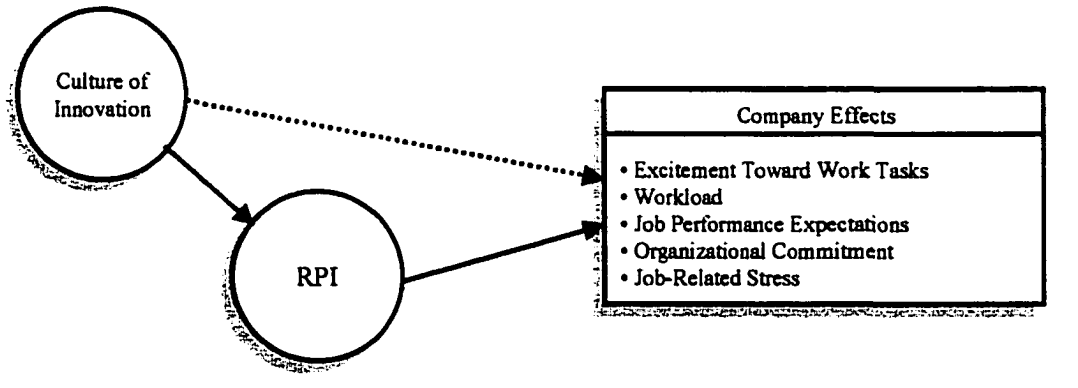
COMPANY IMPACT

From a theoretical perspective, employee perceptions of a high firm RPI are likely to produce a variety of non-financial company outcomes. As firms signal a high RPI, for example through internal corporate cues or public advertisements (e.g., Gilly and Wolfinbarger 1998), employees will form perceptions of the firm and its internal environment. Employees may assume that the high RPI signal by their employer is valid and indicative of company expectations (Spence 1973). By definition, a high-RPI firm (as perceived by the employee) has demonstrated a past history of product innovation and implicitly 'promises' a future stream of new products. This carries a plausible assumption that employees will be expected to regularly engage in NPD initiatives. An employee might arguably interpret this RPI signal as an indicant of what an expected workload (e.g., type/intensity of workload) may be as well as the performance expectations of the firm.

As a firm reinvests in its high-RPI signaling activity, it will likely refine its internal regulative structures (e.g., goals, monitoring, incentives) in a manner conducive to successful new product development. Such actions will conceptually lead to normative patterns of employee behavior and further reinforce the RPI signal internally. As employees gradually conform to these socially constructed norms, the process of institutionalization strengthens the firm's employee-perceived RPI and its effects on employee attitudes and behaviors. This process may ultimately impact the perceptions of potential employees as well during the recruitment process.

Figure 5.2 highlights the proposed relationships between company (i.e., employee) perceptions of a firm's reputation for product innovation, a corporate culture of innovation and the subsequent consumer outcomes that arise from the application of principles from signaling and institutional theories and an examination of the literature. Solid lines in the figure indicate relationships with formal hypotheses found in this study. The inclusion of the dotted line in the figure acknowledges that a corporation's culture can directly impact employee attitude and behavior. This impact, however, is not the focus of investigation here. The impact that corporate culture of innovation has on employee perceptions of RPI and the subsequent non-financial outcomes are of primary interest. Each of the noted variables are defined and discussed in the following sections. Hypotheses are then presented. Managerial views expressed in the qualitative interviews are then discussed.

FIGURE 5.2
The Company Impact Model of a Reputation for Product Innovation



Culture of Innovation. A potential antecedent to employee-perceived RPI is noted in Figure 5.2. A corporate culture of innovation is proposed as a precursor to the development of an

internally (i.e., employee) perceived reputation for product innovation. In this context, culture is broadly defined as the pattern of shared values and beliefs that help individuals understand organizational functioning and provide them with norms for behavior in the organization (Desphande and Webster 1989; Scott 1995). A culture of innovation is defined as a multidimensional construct that leads to values and shared beliefs such as a positive reputation for innovation. Comprising such a culture are four basic tenets:

(i) a long-term corporate orientation.
(ii) realistic goal setting.
(iii) a tolerance of failure.
(iv) a corporate commitment to innovative initiatives.

These components of a corporate culture of innovation are derived from the innovation literature and are perceived as necessary antecedents to successful new product performance (cf. Booz-Allen & Hamilton 1982).

Organizational culture may be conceptualized as either a *variable* or a *metaphor* (Desphande and Webster 1989). Within the variable conceptualization, culture is viewed as an independent variable, endogenous to the firm, consisting of beliefs and values developed within the organization (Deal and Kennedy 1982). This perspective of a culture of innovation is that firm culture is seen as a precursor to conveying a corporate philosophy, building organizational commitment, legitimizing various corporate activities and facilitating employee socialization (Smircich 1983). Employees perceive their firms as having both an internal and an external reputation (Dutton et al. 1994). Further, this reputation develops from firm actions. As an organization develops a culture of innovation through a long-term commitment to new product development (i.e., a high-RPI signaling activity), for example, a philosophy of innovation arguably permeates the workforce and an internally perceived reputation for product innovation gradually ensues (i.e., institutionalization effect). As previously noted, RPI is a perceptual

construct and employee perceptions of their firm's reputation are derived from a history of exposure to the company and its culture. Both firm signals and subsequent reinvestment in those signals are likely to impact employee perceptions.

Likewise, conceptualization of culture as a metaphor results in an organizational symbolism perspective whereby the firm culture is a system of shared meanings and symbols that provide a background against which individuals can interpret their experience (Pondy et al. 1985). From an institutional theory perspective, it is reasonable to expect that a corporate philosophy built upon a continual quest for innovation and new product development will give rise to a culture where employees perceive their organization to be an innovator in the marketplace. In essence, an explicit corporate commitment to product innovation (and subsequent successful introductions) logically leads to a shared interpretation among employees that the company has a high RPI. An organization's culture helps employees to understand how their firm functions and what employee actions are expected (Desphande and Webster 1989). From this perspective, a culture of innovation bolsters the internally generated impression that the organization has a strong reputation for product innovation.

Both conceptualizations of culture support the assertion that a firm-wide culture of innovation, as defined by the four tenets previously noted, can lead to employee perceptions of a high firm RPI resulting from exposure to one or more of the four tenets of an innovative culture. The resultant RPI is proposed to lead to several non-financial company effects detailed in the company impact model. The importance of cultivating a culture of innovation, and thus institutionalizing corporate norms, cannot be overstated. Given this view however, a reputation for product innovation is not presented as a "perfect" mediator (cf. Baron and Kenny 1986) between culture and the non-financial outcome variables. As acknowledged, a culture of innovation may

also directly lead to certain outcomes documented in Figure 5.2 (e.g., organizational commitment; Smircich 1983). Given this,

H_6: The greater the employee perception of a firm's culture of innovation, the greater the employee perception of a firm's RPI.

Unlike the consumer constituency model, involvement is not proposed to mediate the relationship between RPI and company effects. Consumers are heterogeneous and have a variety of choices when evaluating firms and products. A naturally large variance in enduring personal relevance toward any firm is likely to exist in the consumer population. Conversely, employees are proposed to have a relatively low variance in personal relevance levels toward their employing firm. By virtue of the fact that they choose to remain employed there, one can assume a naturally high involvement level across employees of an organization.

Excitement Toward Work Tasks. A firm that actively engages in signaling to its employees that a high RPI is an important corporate dimension informs them that at least some portion of their work tasks will center on NPD initiatives. As the firm reinvests in the high-RPI signal, the likelihood and even the degree of employee tasks centering on innovation will arguably heighten. Given the relatively hectic nature of new product development work tasks, such a prospect can result in two broad responses – excitement or dread. While variances in response will understandably occur at an individual level, one can propose that employees of a self-perceived high-RPI firm, on an aggregate level, will be excited about their work tasks by nature of the fact that they remain employed by the firm. This assumption finds support from research indicating that employees tend to remain employed at firms that extol corporate values that are similar to their personal values (O'Reilly, Chatman, and Caldwell 1991).

Gilly and Wolfinbarger (1998) examine the impact of a firm's advertisements on its employees. Their findings are striking in that employees pay close attention to these firm signals

and evaluate them - rather strictly - in terms of their congruency with their own value system, among other criteria. Where there are non-congruencies between ad messages and employee values, heightened frustration, role conflict and lowered trust in the company result (Gilly and Wolfinbarger 1998). Congruency arguably leads to a reduced job task frustration and role conflict, ultimately leading to heightened employee excitement toward typical work tasks. An innovative reputation, if viewed as a tacit form of public advertising, should logically have similar effects creating employee enthusiasm where there is a reputation-employee value congruency.

Among the multiple dimensions of a work experience, values, attitudes and moods are thought to be among the most important (George 1991; George and Jones 1997). While these dimensions of the work experience are shown to have favorable impacts on job performance, peer relationships and turnover, they could easily be construed as positively impacting (assuming congruency) employee excitement. Namely, better attitudes and improved moods are a logical consequence of a firm-employee value congruency. Employee excitement toward work tasks logically flows from that congruency. Accepting that employees are drawn to and remain employed by organizations that exhibit values that are congruent with their own (O'Reilly et al. 1991), it follows that employee excitement toward typical job tasks can easily occur when employees work in a favorable environment which, in turn, impacts their perceptions (e.g., RPI) of their employer. The degree of this employee-perceived RPI would then equate to an employee that approaches his work tasks with a noticeable degree of excitement, assuming that the employee also perceives a congruency between the firm's values and his own.

In other words, employees are presumed to remain at a high-RPI firm because their experience over time is one where the innovative environment is attractive to them personally. This attraction arguably leads to an enhanced employee perception of the firm's reputation and

ultimately to an excitement toward their work tasks, as the typical workload becomes less of a *job* and more of a *mission*. While these typical work tasks should not be construed in a purely utopian light, the proposed effect of an employee-perceived high RPI is that it fosters an employee excitement level that may not be fostered at a less innovative rival. Therefore,

H_7: The greater the employee perception of a firm's RPI, the greater the employee excitement toward typical work tasks.

Workload. Innovation is a multifaceted proposition for firms. When a firm signals that a high RPI is a priority, it is, by default, stating that a future stream of NPD initiatives are expected. While there are many noted positive consequences to the pursuit of innovation, there are potential downsides to the pursuit as well. An organization that is committed to fostering an innovative reputation will, by definition, continually work toward the development and introduction of new products as it reinvests in the signal. Recurrent product development and introduction activities may create the perception, among employees of the innovating firm, that their typical workload is both heavy and possibly greater than that of less innovative competitive peers. As norms develop to support this corporate quest for a high-RPI, the impression of a relatively heavy workload may increase over time. Regardless of perceptions of excitement or dread when facing their work tasks, the specter of a perceived heavy workload is likely.

Basically, the suppositions of 'what it takes' to be a successful firm may reinforce activities that serve to strengthen the firm's reputation for product innovation and its overriding culture of innovation. In essence, the firm-wide desire for the continuance of the reputation for product innovation, in concert with a corporate culture geared toward innovation, may inflate workload expectations beyond those normally associated with common business practice. Individual perceptions of performance expectations, and therefore the workload necessary to attain the desired performance level, are impacted by senior manager expectations (Martell and Willis

1993), individual attitudes and peer interaction (Wellington and Faria 1996). Expectations also change over time (Wellington and Faria 1996) and indicate that a high RPI signal and the reinvestment in it can arguably lead to normative expectations of reinvestment and greater new product output and, by default, relatively greater perceived employee workloads. It is expected that

H_8: The greater the employee perception of a firm's RPI, the greater the employee perception of increased workload.

Job Performance Expectations. Defined as the employee perception of performance requirements that both exceed those of competitors and that are ever increasing internally, heightened job performance expectations are posited to be an outcome of fostering an internal perception of a high RPI. On a theoretical level, the rationale for positing the relationship between employee perceptions of RPI and subsequent perceptions of the associated job performance expectations is similar to that for perceptions of workloads (H_8). Innovative firms with a history of new product success and an expectation of future product success will arguably set corporate goals that lead to increased performance demands from their workers as they reinvest in the RPI signal. Among the tenets of a corporate culture of innovation that foster employee perceptions and attitudes are that the firm has a *long-term* orientation and a corporate *commitment* to innovative initiatives. Firms must reinvest in the reputation that they promote in order to maximize the expected return from the reputation. Such a work environment and the resulting employee perceptions of a high firm RPI reasonably imply that expectations of continued performance are expected by both senior management and employee peers. As the reinvestment in the reputation continues, normative expectations by both senior managers as well as peers is to be expected as both regulative structures and normative patterns of behavior evolve over time.

From the literature, we find that performance expectations are dyadic in nature. There are expectations by supervisors as well as expectations by employees. The biasing effect of supervisor expectations on employee evaluation is well documented (e.g., Binning and Lord 1980; Downey, Chacko, and McElroy 1979; McElroy and Downey 1982). Work performance expectations of managers may bias employee ratings or evaluations in a variety of ways including directing supervisor attention toward certain information, such as past innovative successes, and away from other potentially more pertinent information (Johnson and Judd 1983). Supervisor expectations concerning a group's performance may also direct their evaluative attention toward employee behaviors that are consistent with past group performance leading to a systematic memory bias that influences how employees are rated (Martell and Willis 1993). In other words, a positive RPI – as internally perceived – can serve to guide future expectations of employee performance. It can act as the dominant measurement against which employees are rated by supervisors as well as against which employees set individual performance goals.

When supervisors hold performance expectations prior to performance observation, the behavior ratings of the groups are, according to some researchers, distorted via systematic memory bias. Assuming an innovative firm culture and a history of innovation (both consistent with the theoretical perspective), supervisor expectations of employee performance are naturally biased upward. Recent research clarifies this relationship and shows that the relationship between performance expectations and performance ratings is mediated by the decision criteria of the rater (Martell and Willis 1993). In this context, the track record of innovative performance and the necessity to successfully reinvest in the firm's RPI may alter the decision criteria of senior managers such that the perceived base level of acceptable employee performance continually rises.

Institutional theory suggests that normative patterns of behavior lead to a routinization of individual behavior and that, over time, groups of people will construct their own social reality (Scott 1995). Thus, performance expectations of the individuals being evaluated could also impact both the ultimate performance as well as the initial attitude toward a task. Research indicates that individuals with relatively higher performance expectations (i.e., self-induced expectations) outperform individuals with relatively lower initial performance expectations (Wellington and Faria 1996). Wellington and Faria further find that expectations are dynamic in that they continually adjust to more accurately reflect actual performance results. In essence, high initial performance expectations can be inflated (deflated) by strong (poor) actual performance over time. This finding further bolsters the hypothesized view that employee-perceived performance expectations will rise for the firm with a high RPI as reinvestment in the signal continues. Coupled with the literature stating that past performance influences expectations (e.g., Binning and Lord 1980; Downey, Chacko, and McElroy 1979; McElroy and Downey 1982), the signaling theory and institutional theory rationale for predicting a positive relationship between employee-perceived RPI and job performance expectations is plausible.

Past successful performance may heighten supervisor expectations while concurrently inflating individual employee expectations thus creating a positive feedback cycle that serves to heighten overall future performance expectations. While the employee's self-perceived expectations may simply be a reflection of an internally driven perception (McGrath 1976), studies show that an "engaging" organizational environment (e.g., a culture of innovation) allows for peer and social influences (e.g., teamwork, interrelationships) to alter individual perceptions and expectations (Marcum 1999; Wellington and Faria 1996). In essence, both sides of the dyadic

relationship (i.e., supervisors and employees) may behave in a manner conducive to fostering a perception of heightened job performance expectations. Therefore,

H_9: The greater the employee perception of a firm's RPI, the greater the employee perception of job performance expectations.

Organizational Commitment When a firm signals a high RPI, the ramifications of reinvestment in the signal have potentially broader implications than simply that of perceived expectations and workloads. At this broader level, the signal may be interpreted as a claim that the firm is committed to being a leader in its industry through repeated NPD initiatives. This arguably imparts some degree of industry prestige for the firm and pride for the employee. On a more practical level, the signal also implies heightened job security and therefore a greater likelihood of organizational commitment. Organizational commitment is conceptualized in various ways and can broadly be defined as a process of employee identification with the goals of an organization (Reichers 1985). Porter et al. (1974) forward that organizational commitment consists of (i) a belief in and acceptance of organizational goals and values, (ii) the willingness to exert effort toward organizational goal accomplishment and (iii) a strong desire to maintain organizational membership. The consequences of increased organizational commitment (OC) as an outcome of a high employee-perceived RPI can be favorable as heightened OC mitigates both employee propensity to leave and actual employee turnover (Johnston et al. 1990), enhances employee job performance (Mowday, Steers, and Porter 1979), and increases an employee's psychological bond with his work tasks (Michaels et al. 1988).

Of the presumed antecedents to OC, *situational characteristics* (e.g., job characteristics, group/leader dynamics, reputation) account for more statistical variance in commitment than *personal characteristics* (e.g., demographics, individual disposition) (Mathieu and Zajac 1990) as one might expect from an institutional theory perspective. Therefore, firm dynamics such as

regulative structures and employee perceptions can play an important role in shaping employee attitudes and behavior. OC is conceptualized as perceptual in nature with degrees of commitment likely to vary among individuals (Reichers 1985). In essence, what is commonly emphasized as 'the organization' is merely an abstraction that is represented, in reality, by co-workers, senior managers and other groups that collectively comprise the organization (Reichers 1985). In reality, employees are committing to their perceptions of their work environment and their interactions with supervisors and peers (i.e., their socially constructed norms).

Conceptualizing organizational commitment as perceptual fits well with the stated belief that a strong corporate RPI is positively related to heightened organizational commitment. It follows that employees who identify with their firm are more likely to exhibit relatively higher commitment levels. Research indicates that employees are attracted to and remain employed by organizations that offer a work environment that is congruent with their individual values (Edwards 1996; Edwards and Cooper 1990). Thus an innovative organization is likely to attract and retain innovation-seeking individuals. Once employed, individuals are socialized (i.e., institutionalized) by the firm culture and either assimilate into the organization or resign via a process of self-selection (O'Reilly et al. 1991) such that individuals who remain employed by self-perceived high-RPI firms are aware of the organizational environment necessary to sustain the high RPI and are likely to show relatively greater commitment to their firms.

Allen and Meyer (1991) identify three forms of OC: affective, continuance and normative. Affective commitment, defined as an employee's emotional attachment to, identification with and involvement in the organization, coincides with the view of OC forwarded in this model and is impacted most profoundly by the work experiences perceived by the individual (Allen and Meyer 1991; Meyer, Irving, and Allen 1998). Inherent in the supposition that being associated with an

innovative firm (i.e., positive employee-perceived RPI) leads to increased organizational commitment levels is the belief that there is a congruency between corporate goals and the individual employees' values (cf. O'Reilly et al. 1991; Reichers 1985). This person-organization (P-O) fit is assumed to be relatively high with the rationale for a strong fit coming from the view that individuals are attracted to organizations they perceive as having values similar to their own and vice versa. Therefore,

H_{10}: The greater the employee perception of a firm's RPI, the greater the employee organizational commitment.

Job-Related Stress. There are negative economic consequences to promoting a false signal (Spence 1973). As such, when a firm promotes a high RPI, it is implicitly stating its intentions to perform tasks necessary to maintain and prolong the reputation. As with previous theoretical rationale on non-financial company outcomes, the implication of a high-RPI signal is that employees will be expected to product *successful* new products. A potential consequence of this is heightened employee stress. While perceptions of workload associated with a high RPI signal are relatively objective, the issue of stress is much more idiosyncratic. In other words, while workloads may be perceived by most employees to be high, individual *reactions* to that workload should conceivably vary. However, despite an individual's personal disposition toward dealing with pressure, some level of employee stress is likely at employee-perceived high-RPI firms given the reinvestment efforts necessary to maintain the RPI.

Extant literature on the issue of employee stress is mixed. Stress is defined here as the perception by an individual that their typical workload is affecting them in a negative manner – both physically (e.g., deleterious health) and mentally (e.g., anxiety). With continued NPD success may come heightened internal demands to perform at ever-increasing levels. Some research in this area reveals that, while the relationships are rather complex and contextual, organizational

practices (e.g., supervisor actions, governance structure) can lead to heightened employee stress (Churchill et al. 1976; Singh, Verbeke, and Rhoads 1996). Both the applied psychology and organizational behavior literatures offer insight into the assessment of whether corporate innovation-seeking behavior results in employee stress. The *fit* between people's attitudes/behavior and their work environment (P-E fit) is the focal point of much organizational stress literature (cf. Edwards 1996; Edwards and Cooper 1990; McGrath 1976) with some research finding that non-congruency between the two results in stress/strain and subsequent poor performance and turnover. Edwards (1996) conversely finds that even as the demands of a job become increasingly congruent with the abilities of the employee (D-A fit), job-related strain remains positively associated. This may be due to the opinion that it is the demands that are *subjectively* perceived by the employee that elicit stress more than any formalized objective demands (McGrath 1976). As such, highly motivated and proficient employees may actually introduce self-inflicted stress into the equation.

As an alternate opinion on the stress question, Brief and Atieh (1987) state that the common notion of P-E incongruency may be overrated and that employee self-reports of stress may correlate more closely with individual disposition than with work demands. Lazarus (1981) further posits that work may even serve as a "refuge" for employees seeking to escape the complexities of daily life. In other words, while stress in the workplace is widely acknowledged and it is reasonable to propose that highly innovative firms create demands that are relatively greater than those at less innovative competitors, any acute stress levels may be partially self-induced by those individuals that are attracted to innovative firms. Innovative organizations may simply attract the prototypical *type-A* personality employee. While the literature is mixed on the

issue, theory suggests that the pressure to continually innovate and to reinvest in the high RPI signal will elicit relatively higher stress levels for employees of innovative firms. Thus,

H_{11}: The greater the employee perception of a firm's RPI, the greater the employee job-related stress.

Qualitative Interviews: Company Outcomes

H_6: This hypothesis proposes that the greater the firm's culture of innovation, the greater the employee perceptions of the firm's RPI. When asked what impact RPI has on employees, organizational culture is mentioned throughout the executive interviews as being a component of the RPI mix regarding employee perceptions and actions. The managers' meta-view of firm culture closely resembles what one would expect from the preceding theoretical discussion. What implicitly emerges from the executive interviews is that a corporate culture of innovation leads to certain outcome variables (e.g., employee-perceived RPI) that ultimately have financial and non-financial consequences for the organization. Numerous managers mentioned organizational culture as being a critical component for innovative firms mirroring academic expectations.

H_7: Employee excitement is hypothesized to result from a high employee perception of a firm's RPI. When asked for their opinions on the potential effects that a high-RPI firm is likely to have on its employees, "What are we going to do next?" and "How can we top this product in the next generation offering?" are typical employee refrains mentioned by the managers. According to the majority of executives interviewed, an almost *assumed* employee excitement level exists at high-RPI firms and is proposed to subsequently lead to other positive organizational effects such as higher morale levels among their employees and more passionate employees (i.e., toward work tasks). The proposed excitement among the employee ranks is similar to excitement generation noted previously among consumers and several managers place marked emphasis on the internal,

employee-specific consequences of pursuing an innovative agenda. For example, two managers' views of how a high perceived RPI affects employees are noted below:

> I think the first impact [of being an innovative firm] is obviously on your associates. I don't think that you can even put a number on that. I think that when you get excitement and enthusiasm from the associates, it translates over into the customers.
>
> Executive Vice-President

> It's probably the most exhilarating thing for a company because you get maniacal focus. Everybody wants to be involved, everybody wants to be a part of it, everybody takes pride in it because we're creating effects in the marketplace.
>
> Vice-President of Marketing

The managers interviewed for this dissertation were obtained from firms generally assumed to be innovation leaders in their industry. The gestalt impression across the interviews is that a culture of innovation fosters an employee-perceived high RPI that primarily leads to heightened employee excitement toward work tasks.

H_8: In this hypothesis, high employee-perceived RPI is proposed to lead to employee perceptions of a high workload. Several of the managers interviewed note that the workload associated with a single product introduction is compounded at high-RPI companies to the point where the quest to innovate can produce a "treadmill-like" atmosphere that must be monitored carefully to avoid employee *burnout*. One manager notes the perceived workload outcome that proactively pursuing innovation at his firm has upon its employees:

> They just get this one (a new product) out the door and you've already got another one in the works ... people are working 70 or 80 hours per week many times.
>
> Vice-President

H_9: Heightened job performance expectations are also hypothesized to occur in high-RPI firms. In high-RPI firms, several managers claim that senior management expectations naturally rise over time (assuming past success) and that employee perceptions of their expected workload also rise as they strive to surpass previous product offerings. As successful new product innovation builds, a culture of innovation is bolstered and an employee-perceived RPI grows. This reputation and the desire to 'live up to it' by continually increasing or improving manufacturing output can reasonable lead to the perception of increased job performance expectations relative to peers at less innovative competitor firms. The belief that their employees sometimes feel overworked is widespread among the executives that manage relatively high-RPI organizations and reflects what one would expect from a theoretical perspective. Insight from the interviews partially mirrors the proposition that firms with a relatively higher employee-perceived RPI will have relatively heightened job performance expectations – at least as perceived by its employees. As one executive of an innovative organization states when asked about his view of how a high employee-perceived RPI affects employees:

> We have this 'let's all run through the brick wall' attitude. It's part of the fabric of the people that we recruit; so, we've never had to demand that people work those extraordinary hours. We [have] just always said 'here's a goal' and then [the employees] work those extraordinary hours.
>
> Vice-President

H_{10}: This hypothesis suggests that high employee perceptions of firm RPI will result in increased organizational commitment. When asked about the employee outcomes of working for a high RPI firm, one of the executives believes that a reputation for product innovation leads to increased organizational commitment because of the camaraderie and excitement that comes from association with an innovative firm:

> The people who are already there (i.e., existing employees) are feeling great about what they're doing and [about] being part of something and a winning team. The whole thing starts to create a positive momentum on every level.

This view ties in with the broader perspective offered where the 'promise' of industry leadership may hold a sense of pride for employees.

H_{11}: Heightened employee stress is also proposed to result from working for a high-RPI firm. While the research literature is somewhat at odds regarding the direction of the relationship between a high-RPI firm and the associated employee stress levels, the executives uniformly affirm that the correlation is a positive one. With each new successful product development at an innovative firm, many interviewed executives claim that the "bar is raised" and expectations from senior management increase. The 'what have you done for me lately' syndrome is said to easily develop in some corporate cultures. Whereas all managers noting employee stress as an outcome agree that being an innovator adds stress to the workplace, some see the increased stress levels as ultimately beneficial while others view it as something that must be carefully managed to prevent employee burnout. The following comments are indicative of the two views:

> I think that there needs to be some level of uncomfortableness all of the time.
>
> President

> ...to put it in a nutshell, take care of the culture and everything else takes care of itself. That's an oversimplification but I think in one sense it's true that if you have the right overall attitude about those sorts of things, people are comfortable in working through the period. If you don't, it seems to me like you can create a monster because there is a lot of pressure.
>
> President

Overall, several executives offered viewpoints that are in line with those suggested by theory and the associated empirical evidence presented. However, while academic rationale for

proposing a relationship between RPI and stress is inconclusive, the managers overwhelmingly predict a positive relationship in line with the theoretical perspective. The discussion now turns to an investigation of the proposed outcomes of competitor perceptions of a firm's RPI.

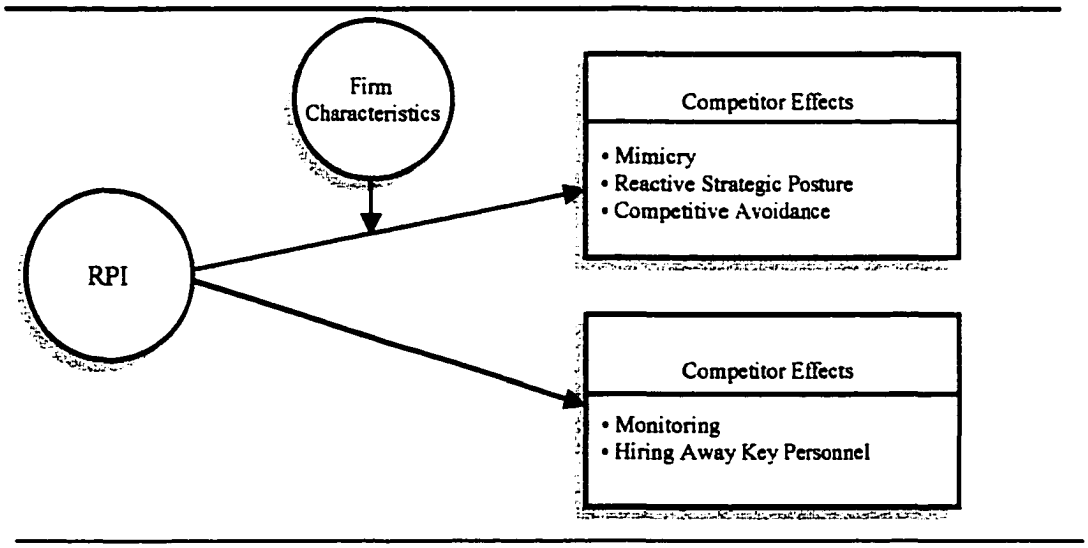
COMPETITOR IMPACT

When a firm overtly promotes itself as a high-RPI organization, it is inherently attempting to convey pertinent information to competitors. The potential risks of loss of reputation and profits associated with making a false claim state to the competitor that the signaling firm is committed to a sustained course of innovation and product development. Conceptually, this has many potential ramifications for competitors. First, it implies that the signaling firm will introduce a stream of new products in the market. This necessitates that competitors must respond. There are a host of potential responses from preemptive introductions to product mimicry to market exit with each having associated opportunity costs.

The high-RPI signal implicitly implies that the costs of competition are likely to be relatively high. This may act as a competitive advantage to the signaling firm in that existing competitors may have to reallocate resources in order to compete and potential competitors may view the signal as an entry barrier if their perceived costs of competition outweigh the benefits. As the signaling firm reinvests in the maintenance of its high RPI, it is likely to create pressures on competitors and ultimately influence both the structure and behavior of the competitors. In essence, as the high-RPI firm continues to invest in its reputation, the consequences of that investment (assuming it is successful) are that a new pattern of organizational interaction should emerge as firms adapt to the changing competitive environment (Selznick 1957, 1996)

Figure 5.3 highlights the proposed relationships between competitor's perceptions of a firm's reputation for product innovation, firm characteristics and the subsequent competitor outcomes that arise from application of principles from signaling and institutional theories and an examination of the literature. Each of the variables noted in the figure are subsequently defined and discussed with regard to their inclusion in the proposed competitor model. Hypotheses are then presented. Managerial views expressed in the qualitative interviews are then discussed.

FIGURE 5.3
The Competitor Impact Model of a Reputation for Product Innovation



Firm Characteristics. Potentially moderating the relationship between competitor perceptions of a firm's RPI and certain competitor effects highlighted in Figure 5.3 are two firm characteristics: firm size and firm age. With increasing firm age comes a normative pressure to respond to environmental stimuli in an increasingly similar fashion. In essence, older firms are more likely to act in a predictable fashion (via the institutionalization effect) as they grow in size than younger, less routinized firms. Older firms require more complex forms of communication

and interpersonal interaction necessary for strategic action can assume a relatively more formal and impersonal style than newer competitors (Haveman 1993). Hence, competitive response from a relatively more established or larger firm may be more predictable than that from a less established or smaller rival. In essence, relatively younger or smaller firms should react to a competitors' RPI (and the assumptions of competitive activity that correspond to it) differently than older/larger firms. They are, theoretically, less routinized or predictable and are likely more agile that older/larger firms.

Both firm size and age impact firm productivity and profitability (Haltiwanger, Lane, and Spletzer 1999). Simply looking at the business press, the annual *Fortune* survey of corporate reputation suggests that corporate reputation and firm size are related as indicated by the continued dominant ranking of relatively large firms across survey years. Fombrun and Shanley (1990) and Vergin and Qoronfleh (1998) provide positive empirical validation of this relationship between organization size and perceived reputation. In other words, firms react differently to other firms depending on their relative size. However, size may simply be a proxy for familiarity with relatively larger firms receiving disproportionately greater attention thus inflating competitor familiarity with the firm's activities (Fombrun and Shanley 1990).

Larger firms have the capacity to invest more in direct cost factors and thus moderate subsequent reputation assessments (Shenkar and Yuchtman-Yaar 1997). They have more strategic options, by virtue of their size, than relatively smaller firms. Hence, while relative firm size is examined in the literature as a moderating variable, it may be that consequential effects (e.g., familiarity, media exposure, sheer presence) arising from firm size are the actual moderators of competitor reactions. The locus of interest in this study centers instead on competitors' reactions to their perceptions of a firm's reputation for product innovation and it is reasonable to assume

that firm size will play a role in the relationships posited here as well. Older and larger firms may respond to a high-RPI signal in a relatively more routinized or delayed manner.

Likewise, the relative age of a firm is proposed to moderate the relationship between RPI and certain competitor actions. As an organization ages, internal processes become increasingly routinized or formalized in an effort to provide stability and structure. This structure and stability allow the organization to grow in size and remain an ongoing concern. Yet age, and an assumed firm growth, can also lead to less competitive flexibility. The increase in formalization increases the internal adherence to rules and structures thus making individual employee actions more "patterned" (Zucker 1988). In essence, firms become institutionalized over time as distinctive forms, processes, strategies, outlooks and competencies emerge (Selznick 1996).

As with the company constituency model, personal involvement level is not proposed to mediate the relationship between a competitor's perception of a firm's RPI and the predicted competitor effects. While variance is expected among the consumer constituency regarding the degree to which a firm's RPI is deemed as personally relevant, competitors have little choice but to perceive most competitors in an industry as relevant. Thus, the involvement levels of competitors of a high-RPI firm are assumed to be relatively high with little variance.

Mimicry. When a firm signals to competitors that they are pursuing a high RPI, they are implicitly sending a message that a stream of NPD initiatives is forthcoming. This introduces an added measure of uncertainty into the market. If competitors choose to 'out-innovate' the high-RPI firm, the issue of capital resource availability arises. Institutional theory suggests that product mimicry is a plausible competitive alternative when faced with a highly innovative opponent. Where firms possess the capabilities and desire to respond to a competitor's new product introduction, a common competitive response is the introduction of highly similar competitive

products. This effect, whereby an innovator introduces a new product and competitors respond with a similar – often less expensive – product, is evidenced across multiple industries (e.g. fashion, consumer electronics, food). The long-term benefit to the signaling firm in this introduction–mimicry relationship is that the less innovative rival increasingly moves from a *proactive* competitive posture to a *reactive* one, thus allowing the innovator to set the competitive pace. With issues of free riding (i.e., reverse engineering, second mover advantage) aside, this interplay often places the innovative firm in the *driver's seat* within the marketplace segment.

Organizations within an industry and facing the same or similar environmental constraints will tend to be isomorphic to one another and their environment-at-large (DiMaggio and Powell 1983). This isomorphism (i.e., high similarity of action) among firms should not be interpreted as being the result of inefficiencies or maladaptions but simply as a plausible response by institutions facing an environment of uncertainty and imperfect information (Powell 1991, p. 194). When perceiving a competitor as having a relatively higher RPI (that has developed over years of observation and interaction), less innovative firms will arguably strike a relatively reactive competitive pose. If a firm is known for regularly introducing innovative products (e.g., Microsoft), less innovative rivals may be less inclined to innovate themselves and be more likely to wait for the relatively more innovative firm to 'make the first move.'

Mimicry is the process by which one organization copies a product or process of another organization. Mimicry of the innovator has certain cost advantages over introducing a unique new product because the relatively higher-RPI firm can introduce a competing product that, if successful, may translate into financial loss for the less innovative firm. Evidence of mimetic action is derived from an array of studies (cf. Haveman 1993) and mimicry is an efficient response to marketplace uncertainty. When faced with competitive uncertainty (e.g., number and timing of

new product introductions by an innovative competitor), firms commonly imitate the actions of other industry competitors (Meyer, Scott, and Deal 1983). It is logical to propose that the signaling firm (with a relatively higher RPI) will serve in an industry leadership role – at least in regard to product development – and be the more likely target of mimicry by competitors that perceive themselves as having a relatively weaker reputation for product innovation.

Penrose (1959, p. 58) refers to the "subjective uncertainty" of the competitive environment and states that such uncertainty is comprised of personal temperament and awareness that the decision-maker possesses insufficient market information. Uncertainty is a powerful force that encourages mimicry (DiMaggio and Powell 1983) and the imitation of a high-RPI firm's actions may actually reduce any dissonance associated with the competitors strategic decision by conferring some measure of external validation of the decision. In other words, a high RPI is earned through repeated successful new product introductions. Past success is indicative of future success (i.e., via firm reinvestment in the high-RPI signal) and may validate the less innovative organization's decision to follow the lead of the innovator. This validation may be in the form of a "legitimization" of the decision (DiMaggio and Powell 1983). Therefore, mimicry is a natural response by managers operating in an uncertain and competitive environment to changes (e.g., product introductions by an innovator) in that environment. Further, the relative size and age of the responding firm is likely to play a role with larger and older firms more prone to engage in mimicry. Younger and smaller competitors, presumably having less structural complexity, are more likely to react with a less mimetic response (e.g., introduce a rival product design). Thus,

H_{12}: Relative firm size and age will moderate the positive relationship between competitor perceptions of a firm's RPI and competitive mimicry. The relationship between RPI and mimicry will decrease with smaller and younger (relative to the innovator) competitors.

Reactive Strategic Posture. As firms interact over time, institutional theory suggests that mimicry of a high-RPI firm is a plausible competitive response. A natural consequence of mimicry is that, over time, it positions the mimicking firm into an increasingly reactive competitive posture. As is the case with mimicry, the greater the relative size and age of the less innovative firm, the greater the expected reactive posture. This proposed amplification in reactive posture follows the rationale offered in the preceding section on mimicry. Namely, larger and older firms are more likely to have *institutionalized* responses toward their environment and are less likely to exhibit competitive flexibility. Competitive mimicry closely resembles the concept of "adaptive" organizational learning (Senge 1990; Slater and Narver 1995) where firms are increasingly bound by the constraints that a narrow focus or perspective places upon the mental model of their managers. "Generative" learning (Senge 1990; Slater and Narver 1995), conversely, describes an approach whereby the firm is more proactive in their information gathering activities and better able to generate breakthrough ideas. As the strategies and outlooks of the firms change over time, the mimicking activity of the relatively less innovative firm may become routinized into a pattern of strategic *reaction*, thus defaulting market leadership to the high-RPI firm.

Some academic exploration of the impact of reputation on competitive activity uses a game theoretic approach and deals with the effect of reputation on firm decisions to enter markets or reduce prices (e.g., Kreps and Wilson 1982; Milgrom and Roberts 1982). While the dominant game theory focus centers on the pricing reputations of monopolists, the findings provide insight into how a strongly perceived high RPI may impact competitors. For example, in the game theory simulations, the introduction of uncertainty heightens the impact that reputation (e.g., for price cutting aggressiveness) has on competitive response. In other words, in the absence of perfect marketplace information (i.e., subjective uncertainty), firms look to the reputation of their

competitors before making a market entry or pricing response decision (Kreps and Wilson 1982; Milgrom and Roberts 1982). Thus, the competitor-perceived reputation of a firm impacts the actions of its competitors. Signaling a high RPI and reinvesting in that signal arguably has a similar impact, forcing less innovative firms to adopt a reactive competitive stance. In essence, a normative pattern of mimicry of an innovative competitor may ultimately lead to a routinized, reactive competitive posture. Therefore,

$\mathbf{H_{13}}$: Relative firm size and age will moderate the positive relationship between the competitor perceptions of a firms' perceived RPI and competitors' reactive strategic posture. The relationship between RPI and a reactive strategic posture will decrease with smaller and younger (relative to the innovator) competitors.

Competitive Avoidance. Signaling a high RPI can influence the actions of potential competitors as well as those of existing ones. If a firm contemplates entering a market or industry that contains a high-RPI competitor, that firm knows in advance that to compete successfully they are required to make large and ongoing investments in new product development (NPD) initiatives. Where mimicry is one strategic alternative when reacting to the actions of an innovative firm, competitive avoidance is another option. Mimicry, as a competitive response in this context, applies more to *existing* industry competitors. Yet, exceptions should be noted. Potential competitors can also use product mimicry as a market entry vehicle if existing competitors appear to offer insufficient competitive product offerings.

Competitive avoidance, in this context, centers mainly on firms that are not current competitors of the competitor-perceived high-RPI firm. Here, as well, there are exceptions. Competitive avoidance (e.g., via market exit) is also an option to an existing competitor that lacks the resources or the will to continue competing in the marketplace. Regarding potential competitors, a high RPI signal and the implicit commitment to reinvest in new product development may serve as an entry barrier to competitors by signaling that the cost of competition

is high. This can be especially true if the less innovative firm is smaller or younger than its more innovative competitor. The assumption here is that the smaller/younger firm may not have the capital or physical assets to effectively compete and may choose to avoid direct competition.

Some literature on firm signaling activities (e.g., Farrell and Saloner 1986; Robertson et al. 1995) offers insight into why competitive avoidance may be a probable competitive outcome of signaling a high RPI. While certain research indicates that nearly 30% of firms *receiving* a new product announcement signal respond with a competitive product (Robertson et al. 1995) other research indicates that environmental signals, such as RPI, can deter market entry by competitors (Gruca and Sudharshan 1995). Again, firms with relatively fewer competitive resources (e.g., smaller/younger) are more likely to be deterred given their relative resource disadvantage. A logical inference is that a competitor-perceived high RPI, acting as a signal, can induce market exit as well as deter market entry. The game theory literature on reputation as a determinant of competitive action (e.g., Kreps and Wilson 1982; Milgrom and Roberts 1982) noted previously applies here as well.

Regarding the impact of a firm's size and age, Bowman and Gatignon (1995) find that the higher the market share (one measure of firm size) of a firm introducing a new product, the more delayed the competitive reaction from competitors (i.e., with smaller market share). Hence, relatively smaller or younger firms may be more inclined toward competitive avoidance than larger, more established counterparts that potentially have greater slack resources. Bowman and Gatignon also find that competitive response time is longer in environments where products change sporadically or more frequently (e.g., surgical/medical instruments industry). Both are situations that could apply to an environment that boasts a firm with a high RPI. Frequent design changes or new product introductions introduce uncertainty and risk into the product development

equation. As such, the firm cost of product failure increases. Smaller, younger or relatively less innovative firms may be inclined to avoid such markets.

It is reasonable to expect that an innovative reputation can act as both a competitive and an entry deterrent. Porter (1980, p. 9) notes that established firms that enjoy brand identification and customer loyalties benefit from a differentiation that creates a barrier to entry by forcing prospective entrants to spend heavily to overcome existing consumer loyalties. It seems reasonable that a firm with a high reputation for product innovation might also enjoy a differentiation that could prove cost prohibitive for some competition to overcome. Larger, more established firms with a RPI that is perceived to be relatively higher than other firms, by definition, possess a history of new product success and the resource capability to reinvest in the future. This environment may arguably convince younger and smaller firms to avoid direct competition with the higher-RPI firm. Thus,

H_{14}: Relative firm size and age will moderate the positive relationship between the competitor perceptions of a firm's RPI and competitive avoidance. The relationship between RPI and competitive avoidance will increase with smaller and younger (relative to the innovator) competitors.

Monitoring. When a firm signals a high RPI it will logically attract the attention of competitors. Such a signal indicates to competitors that the high-RPI firm will engage in ongoing NPD initiatives – activities that are of obvious strategic competitive importance to competitors. Competing firms routinely track the activities of an innovative opponent to avoid being caught off guard or to decrease the competitive response time as much as possible. Discussions with channel members, perusal of trade publications and even occasional corporate espionage are among the methods that competitors can use to monitor the innovative firm. Generally, the relatively more innovative firm (as perceived by a competitor) is looked to as the source for new product ideas and as a barometer of consumer trends. The assumption is that the historical record of NPD

reinvestment that fosters the perception of a high RPI among competitors comes about because of strong market knowledge and execution skills. While there are no studies that directly focus on the impact that an innovative reputation has on competitor's monitoring activities, concepts from signaling and institutional theories and research findings from the organizational learning literature offer insight into this proposed outcome. The high-RPI signal introduces greater uncertainty to the marketplace and competition is likely to monitor the innovative firm's attempts at reinvestment in an effort to develop an appropriate response strategy.

Cyert and March (1963) first addressed the issue of organizational learning whereby firms *learn* through repeated interaction with their competitive environments. This learning arises via both an inward and an outward focus by firms. Organization learning is conceptualized as an aggregation of individual learning over time whereby knowledge is preserved so that it can be used by individuals other than its originator (Sinkula 1994). Sinkula takes care to characterize organizational learning as a "market-based" activity implying that attention to the environment (e.g., competitors, customers) is a key organizational learning aspect. Monitoring of key competitors, therefore, is an intuitive component of a market-based learning approach and supports the view that managers have a subjective uncertainty about their competitive environment and will look to competitors for some strategic direction (Day and Wensley 1988; Penrose 1959). A firm with a relatively higher RPI is a likely target of monitoring given its past success, and likely future success, in the marketplace. Relatively less innovative firms (as self-perceived) will arguably look to their more innovative competitor for indications of future competitive activity. This monitoring of the high-RPI organization reduces the level of marketplace uncertainty and allows the less innovative firm to formulate an appropriate course of action (e.g., preemptive introduction, mimicry, avoidance).

In the same manner, for managers to make effective strategic decisions, they must somehow reduce the level of environmental uncertainty (Pfeffer and Salancik 1978). In an effort to simplify their environment, managers predominantly adopt either a customer-focused or a competitor-focused perspective in their decision-making heuristic (Day and Wensley 1988; Day and Nedungadi 1994). Both of these foci entail a firm referencing itself to some external environmental standard. The advantage to the innovative firm is that organizations having a competitor-oriented approach to strategy place little stock in innovative activities and rarely undertake activities that rely on product differentiation (Day and Nedungadi 1994). In essence, they may take a reactive strategic stance and give the strategic *upper hand* to the firm that they perceive to have a relatively greater RPI.

As an aside, it is likely that even a predominantly internally focused organization incorporates some manner of external referencing into their marketing strategy. In other words, monitoring activities are not confined to any particular type of organization as most firms engage in some monitoring activities. The use of management consultants is a case in point. Some organizations, notably large firms, choose from among a select few consulting agencies, which act to "spread a few organizational models throughout the land" (DiMaggio and Powell 1983) potentially leading to increased homogeneity in thought and action. The proposition here is that, as an organization builds a perceived high RPI, competitors will become increasingly attuned to its activities. Therefore,

H_{15}: The greater the competitor perceptions of a firms' RPI, the greater the competitor monitoring activity of the high-RPI firm.

Hiring Away Key Personnel. With the signal of a high RPI comes the potential threat of losing employees to competitors that endeavor to lure them away. This proposed heightened attempt to lure away key employees elevates the importance of organizational efforts to foster a

corporate culture that encourages employee loyalty as well as inventiveness. The resource-based view of the firm (Barney 1991) provides rationale for this proposed competitive raiding activity. Under the resource-based view, competitive advantage is defined as implementing a value-creating strategy that is not being pursued by competitors (Barney 1991). Competitive perception of a firm's RPI as being high indicates, by default, that the firm has successfully implemented a value-creating strategy. While this does not preclude less innovative firms from pursuing product innovation as a value-creating strategy, the *relative* difference in the competitor perceptions implies that the higher-RPI firm is more successful than its competitive counterpart.

A key component of the resource-based view resides in the intangible skills of a firm's employees. These tacit skills are an intangible firm resource that may not be easily imitated by a competitor, are tied semi-permanently to the firm and create a capability gap that is a formidable competitive barrier that may easily persist over time if not rectified (Barney 1991; Caves 1980; Coyne 1986; Reed and DeFillippi 1990). If the physical aspects of innovation (e.g., product components, production facilities) are available to all competitors (i.e., mobile) in an industry, then one *differential* success factor leading to marketplace success and a subsequently high reputation for product innovation arguably lies in the innate skills of the innovator's employees. Barney (1991) notes that firms cannot purchase intangible resources in the open market (i.e., it is not a commodity material that is readily available). Attempts by a relatively lower-RPI firm to hire away key employees from the relatively more innovative firm are a plausible competitive response in an effort to narrow a capability gap. Therefore,

H_{16}: The greater the competitor perceptions of a firm's RPI, the greater the external attempts to hire away key firm personnel.

Qualitative Interviews: Company Outcomes

H_{12}: Mimicry is a hypothesized competitive outcome when competitors face a high-RPI firm. When asked about the specific impact that a high-RPI firm has on competitors, product mimicry was the executives' dominant response. As one manager notes:

> There's a lot of copycat stuff going on but it's never the same [quality as the original]. It's never as good. And then we move on to the next thing, so, they're always one step or two steps behind because you have to constantly be thinking about what's the next level.
>
> Executive Vice-President/CAO

This managerial opinion that mimicry is a realistic and valid competitive response reflects the proposed rationale for H_{12}. Interestingly, some managers state that competitors will often assume that the more innovative firm possesses favorable market research knowledge regarding a new product's marketplace prospects. This assumption on the part of the less innovative firm may create uncertainty as to how it should best respond. Sensing that the high-RPI firm has superior market information (presumed because of past success), the less innovative rival may be prone to 'look to the lead' of the more innovative firm when forming a competitive reaction. This assumption of superior market information by the high-RPI firm, lends credence to competitors' decision to mimic the high-RPI firm, thus reinforcing the institutional effects and prolonging competitive advantage to the higher-RPI firm.

H_{13}: This hypothesis states that a high RPI can lead competitors to adopt a reactive strategic posture. One of the underlying themes in the managerial interviews is that a firm signaling a generative approach to the marketplace (i.e., the high-RPI firm) forces less innovative competitors to take an increasingly adaptive, and hence reactive, approach. This response implicitly sustains the competitive advantage of the innovator. The competitive results are

predictable and are exemplified by one Vice-President of Marketing's rationale for pursuing a high-RPI strategy: "Every day that we spend on defense is a day that we're not living up to our potential." Some of the managers interviewed recognize the reactive position that their innovative activities place competitors in and use it as a competitive tool by anticipating what a competitive reaction to a particular product introduction might be and then planning to blunt the anticipated response even before the initial introduction is made. Other executives note that innovators, cognizant of the reactive posture of certain competitors, will sometimes signal a strategic intention well in advance of an actual move in an attempt to either fend off competitive entry or to redirect the focus and resources of an existing competitor. There is clear consensus across interviews that a high-RPI firm places less innovative competitors in an increasingly reactive strategic posture.

H_{14}: Competitive avoidance is another proposed outcome of competitor-perceived RPI. As a firm's RPI builds among competitors, the view among some managers interviewed is that competition decreases somewhat in one of two ways. Some executives interviewed state that existing competitors who lack the resources to compete on a head-to-head basis will likely exit the contested market segment over time. Others view a high RPI as serving as a barrier to entry to firms that see the cost of competition with an innovator outweighing the profit potential. Market entry and/or competitive continuance may not always be the competitive answer of choice notes one Executive Vice-President:

> ...I am sure there's that hesitancy of whether or not to go head-to-head. I guess it all depends upon the level of confidence in what it exactly is that they're rushing in for.

The view of several managers is that firms not possessing the will or resources to compete directly with a high-RPI rival will bypass or exit the category and reflects the rationale forwarded for H_{14}.

H_{15}: Perceptions of a high firm RPI are proposed to lead to increased monitoring of the more innovative firm. When an organization is perceived as innovative (i.e., high RPI), the

interviewed managers' general impression mirrors that of what one would theoretically expect in that the high-RPI firm attracts a tremendous amount of competitive benchmarking attention. The greater the track record of success, the greater the perception of being monitored by competition. The mental model of the interviewed executives with regard to this proposed outcome most closely aligns with the competitor-oriented approach discussed previously. Thus, managers may likely focus on the actions of a key competitor (e.g., the innovator) and use its actions as a "benchmark" from which to base a subsequent action or reaction.

H_{16}: This hypothesis states that a high competitor-perceived RPI will result in a competitive *raiding* of employees. Attempts by competitors to hire away employees associated with innovative firms are a "fact of life" according to some executives interviewed when asked about the effects of a high-RPI firm on industry competitors. As the firms become more successful at introducing marketplace innovations, some managers note heightened efforts to lure key personnel away. As successful product introductions mount, competitors and/or professional recruiters increasingly target the employees of innovative firms in an effort to 'buy' the talent responsible for the successes. According to a few managers, certain less innovative competitors apparently view employee-raiding practices as the most immediate and financially expedient method for acquiring the human capital needed for successful competition.

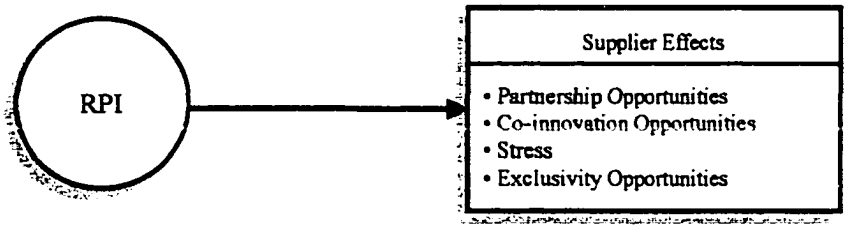
In general, several of the interviewed executives expressed views of the competitive effects of a high RPI that are consistent with what one would expect from those suggested by theory and the associated empirical evidence presented in the literature. In essence, they generally view high RPI as a tool that forces less innovative rivals to take a reactive strategic posture. The discussion now turns to an investigation of the proposed impact of RPI on suppliers.

SUPPLIER IMPACT

When a firm promotes itself as being an innovator by signaling a high-RPI to its constituencies, industry suppliers (existing and potential) to the firm will make certain inferences from the signal. One is that the high-RPI firm is a good prospect for their own products. This can be deduced by the 'promise' of continued NPD initiatives implicit in the signal. The promise of continued product development equates to a potential stream of revenue for the supplier in a relationship is established. The threat of negative sanctions against firms that signal false claims allows suppliers to be relatively more confident in developing closer ties with a high-RPI firm and even in committing resources to an extended partnership. As high-RPI firms reinvest in their reputation, it can be expected that potential suppliers will begin to compete for the firm's business. Thus a high RPI may equate to more favorable financial terms on supply materials as suppliers may be more likely to reduce prices given the implicit message that exchanges with the high-RPI firm are likely to persist for an extended time.

Figure 5.4 highlights the proposed relationships between a supplier's perception of a firm's reputation for product innovation and the subsequent supplier outcomes that arise from an application of the principles of signaling and institutional theories and an examination of the literature. Each of the variables noted in the figure are subsequently defined and discussed with regard to their inclusion in the proposed supplier model. Hypotheses are then presented. Managerial views expressed in the qualitative interviews are then discussed.

FIGURE 5.4
The Supplier Impact Model of a Reputation for Product Innovation



Personal involvement level is not hypothesized to mediate the relationship between a supplier's perception of a firm's RPI and the predicted supplier effects. While variance is expected among the consumer constituency regarding the degree to which a firm's RPI is deemed as personally relevant, suppliers must sell their products to a fairly stable group of firms. Thus, the involvement levels of suppliers of a high-RPI firm are assumed to be relatively high with little variance.

Partnership Opportunities. As a firm's perceived reputation for product innovation grows among suppliers and becomes widespread in its respective industry, increased attention by suppliers may naturally evolve into opportunities to form partnerships with certain suppliers. The perceived positive reputation for product innovation accrues to a firm after a history of successful new product development initiatives (Avlonitis et al. 1994; Vendelo 1998). This consistency by the high-RPI firm signals to suppliers that the innovator is a viable *long-term* competitor that is relatively more likely than less innovative firms to commit to ongoing product development initiatives. This signal is arguably attractive to suppliers who seek avenues of distribution growth

for their products. As the signaling firm reinvests in the reputation over time, the attraction will logically increase.

Scholarly research on the impact of an innovative reputation on channel member relations is relatively scarce. Where tangential investigation exists, there is some measure of support for the proposed innovator-supplier impacts. The benefits to supplier firms of developing close partnerships with customers include reduced expenses, higher percentages of repeat sales and opportunities to cross-sell other products (Kotler and Armstrong 1991). Jackson (1985) notes that certain key clients can serve as "showcase accounts" for suppliers in addition to being a source for new product ideas. Having a company with a strongly perceived RPI (e.g., 3M, Hewlett-Packard) often prompts other companies to seek out that supplier. Thus, partnering with an innovative firm can lead to potential sales growth for the supplier on multiple fronts. The 'umbrella' of benefits of supplying a recognized innovator is likely to attract suppliers to the high-RPI firm.

Kalwani and Narayandas (1995) examine long-term manufacturer-supplier relationships from the supplier's perspective. Among their findings are that supplier cost structures are generally lower for suppliers engaged in long-term relationships relative to suppliers engaged in transactional relationships. Suppliers engaged in long-term relationships with a manufacturer have lower inventory and control costs, lower SG&A costs and higher return on investment relative to transaction-oriented suppliers (Kalwani and Narayandas 1995). Firms maintain perceptions of a high RPI with signal reinvestment and a track record of new product successes. This RPI is built over time and the inherent *enduring* qualities of the reputation (Donlon 1998; Vergin and Qoronfleh 1998) signal that the success is likely to continue. This signal should attract suppliers in search of a long-term business partnership as it promises a greater revenue stream. Thus, partnering with an innovative client potentially leads to numerous positive outcomes for the

supplier. However, a downside in the form of lower relative gross margin levels is also found (Kalwani and Narayandas 1995) and may be the result of pressures by manufacturers to pass along cost savings to them. Yet, a track record of reinvestment and the implicit 'promise' of continued reinvestment by the high-RPI firm will arguably result in suppliers being attracted to the firm. Thus,

H_{17}: The greater the supplier perceptions of a firms' RPI, the greater the relative partnership opportunities.

Co-innovation Opportunities. Research in marketing channels experienced a rather dramatic shift in focus over the past decade. The movement was away from the traditional micro-economic focus with its roots in neoclassic economics toward a more behavioral focus on the design of mechanisms for coordinating the role performance of channel members (Heide 1994; Heide and John 1988). The shift in focus from the analysis of discrete exchange to relational exchange was brought about, in part, by the changing dynamics of a global marketplace (Morgan and Hunt 1994). In a somewhat counterintuitive statement, Morgan and Hunt posit that to be an effective competitor, a firm must be an effective *cooperator* in some network of organizations. As Heide (1994) notes, when discrete exchange is abandoned, some form of relationship is crafted.

This "coopetition" viewpoint is endorsed in the popular press (e.g. Moore 1996) as well as the academic press (e.g., Kumer, Sheer, and Steenkamp 1995) and supports the view that procedural and distributive fairness among channel partners are vital in the modern business environment. Trust between the supplier and the buyer (here, the innovative firm) is a factor that must exist if relationship activities are realistically plausible (Doney and Cannon 1997; Kumer et al. 1995; Morgan and Hunt 1994). A supplier-perceived high firm RPI is a signal that the high-RPI firm has a track record of quality and success, that continued reinvestment is likely and that trust may be well placed. In the absence of complete information about a firm, this reputation for

product innovation serves as an indicator that the firm is worthy of partnership consideration as noted previously. A company with a high RPI will arguably attract suppliers more than a firm with a lesser reputation by virtue of the implicit assumption of reinvestment. Likewise, A willingness by a supplier to make capital and/or human investments in the NPD initiatives of a buyer signals to the innovating firm that the supplier is worthy of some measure of trust (Ganesan 1994). This trust between firms is a necessary prerequisite to any long-term relationship (Doney and Cannon 1997; Morgan and Hunt 1994).

This willingness of the supplier to make an investment of human or financial capital, subsequently referred to as co-innovation, is prompted by the same theoretical dynamics that lead to partnerships. Co-innovation, however, may also be considered a consequence emerging from a successful history of buyer-supplier partnerships. It is defined here as a mutual commitment of buyer and supplier resources to produce new products. This joint investment of capital leads to greater relational commitment by both parties and logically to a mutually beneficial relationship. As buyer and supplier organizations move increasingly toward relational exchanges, the concept that suppliers and innovators should capitalize on mutually beneficial opportunities becomes increasingly plausible. This plausibility should amplify as the RPI of a firm and the 'promise' of continual reinvestment heightens. Given this,

$\mathbf{H_{18}}$: The greater the supplier perceptions of a firm's RPI, the greater the co-innovation activities.

Stress. While the posited effects on suppliers of firms with supplier-perceived reputations for product innovation are thus far mostly positive, theory suggests potentially negative aspects as well. To maintain a high-RPI, firms must continually reinvest in NPD initiatives. As the period of reinvestment continues, the signaling firm will plausibly look to external sources (e.g., suppliers) to help maintain the reputation. The innovative firm's heightened demands on a supplier may

include expectations of lowered cost structure over time, inventory management issues, manufacturing capability issues and contractual obligations among others. In short, with the noted benefits of the relationship come potentially increased stress levels for supplier firms. Kalwani and Narayandas (1995) note that supplier stress levels rise as the level of customer expectations rise over the length of the relationship. It is logical to propose that the expectations of a high-RPI firm rise over time as the need to reinvest in the RPI signal continues. The institutionalization effect at the high-RPI firm may act to upwardly bias company expectations (Binning and Lord 1980; Downey et al. 1979; McElroy and Downey 1982) of itself and also of its suppliers.

The insight used previously to explore the stress that innovative activities might place on internal employees applies here as well. Namely, the activities necessary to successfully reinvest in the high-RPI signal can easily translate into pressure on suppliers to perform at an increasing level and result in heightened supplier stress. In reality, it is not a nebulous concept of *suppliers* that interacts with *buyers*; it is the employees that comprise the supplier organization that are interacting with employees of the buyer organization. As such, similar employer-related expectations and demands exist with suppliers merely responding to the needs of the innovative customer in a business-to-business setting as opposed to the ultimate consumer. Even if suppliers are adept at producing the necessary component of the buyer's innovation, any threat of alternate suppliers (assuming no partnership exists) or heightened demands by the buyer can also serve to increase supplier stress levels. The threat of alternate suppliers becomes a realistic concern as other potential suppliers are attracted to a high-RPI firm (i.e., past success is indicative of future success).

As expected, if demands by the high-RPI firm rise over time, the supplier, particularly one that has not entered into some partnership relationship with the innovator, may be faced with an

increasingly narrow margin for error. Even if there is a congruency of values and a commonality of purpose between a supplier and a high-RPI firm, the dynamics of the partnership may still elicit supplier stress (Edwards 1996) as suppliers are not as capable of 'self-selecting' potential buyers for their goods as employees are of self-selecting a place of employment. Thus,

$\mathbf{H_{19}}$: The greater the supplier perceptions of a firm's RPI, the greater the perceived stress level of supplier employees.

Qualitative Interviews: Supplier Outcomes

Exclusivity Opportunities. While the idea of increased exclusivity opportunities was not explicitly conceptualized prior to the qualitative interviews, it is mentioned across interviews with sufficient frequency that it is included as an additional manager-driven hypothesis. The mention of exclusivity agreements in the managerial interviews ties closely with the preceding discussions of partnership and co-innovation opportunities. Yet, it is often mentioned in the interviews as a separate outcome of a high RPI. Many executives believe that suppliers are more willing to sign exclusivity agreements with a firm that has a proven history of product innovation. The supplier-perceived innovative reputation is viewed as a signal to the supplier that the innovator has a long-range strategic design that, from the supplier's view, is more likely than not to translate into a stream of profits for both organizations. One manager's statement illustrates the general group impression:

> ... if you're an innovative company, I think you gain the right to attract the most innovative and leading-edge suppliers because they are investing in technology and they know that you're going to be the most probable outlook for their technology. Therefore, they're willing to spend more time getting to know your business and your customers and your particular business needs.

Given the similarity of this effect with the other noted supplier outcomes, the preceding supplier constituency discussions suffice to motivate this particular managerial assessment that a high RPI

(as perceived by the supplier) is likely to result in exclusivity opportunities with suppliers that less innovative competitors may not enjoy. Therefore,

H_{10}: The greater the supplier perceptions of a firm's RPI, the greater the exclusivity agreement opportunities.

H_{17}: This hypothesis centers on the proposition that the greater the supplier-perceived RPI of a firm, the greater the relative partnership opportunities for the firm. Several executives assert that suppliers are more willing to tie their fortunes to a relatively innovative firm and that, likewise, many innovators prefer a few, steady suppliers to a plethora of changing supplier firms. Additionally, suppliers are said to develop improved products as a result of the partnership. Several executives note that enduring partnerships often lead to greater interaction and expectation between the two companies. In essence, the stability of a partnership, and the subsequent revenue flow, encourages suppliers to heighten their own product development efforts. Notes one Vice-President of R&D :

> ...knowing that we were very focused on innovation and new products, we have developed a relationship with [our suppliers]. We have a lot of partnering going on and strong partnerships are associated with that. We try to introduce new products with their materials in them.

Most of the managers comments centering on innovative firm relations with suppliers hint that more highly innovative firms enjoy more stable, long-term supplier relationships than their less innovative counterparts. Thus, the interviews present several areas of common ground with theory and the associated empirical evidence.

H_{18}: The second supplier hypothesis centers on the belief that supplier perceptions of high RPI can lead to co-innovation opportunities. Partnering in some supplier-innovator relationships is argued by certain managers to reach an even higher level where the two organizations jointly work

on new product initiatives. Suppliers may or may not have a financial stake in the enterprise, but they invariably have an intellectual stake and a large commitment of human resources in such arrangements. Under such a relationship, both organizations work in tandem at a level higher than that of a typical buyer-supplier relationship due to the belief that the enhanced partnership is mutually beneficial. Of the managers that mention participating in co-innovative ventures, two speak highly of the relationship. For example:

> ... in that respect, we get the allegiance of our suppliers and that has been reciprocated by our allegiance to them. I think that it's an excellent working relationship.
>
> General Manager

> We do profit sharing with our employees; maybe we need to do profit sharing with our suppliers so that they are just as incented to win as we are.
>
> Business Development Leader

The executives' view that certain innovators and their suppliers are likely to find co-innovation to be a plausible alternative to a discrete transfer of goods ties in well with the evolution of channel management prescriptive strategies.

H_{19}: This proposition deals with the expectation of higher stress levels for suppliers of high-RPI firms. The executive interviews failed to elicit any opinion on this high-RPI and suppler stress relationship although two managers did remark that as the innovator continues to innovate, demands on the supplier could concurrently rise. The belief that buyer demands will rise is consistent with the theoretical expectations but no managers explicitly note supplier stress as an outcome. These increased demands are a likely result of increased expectations and the net result is likely to be heightened supplier stress levels, especially if the supplier is somewhat reliant on the buyer.

Aside from the lack of managerial views regarding supplier stress levels, the executive opinions regarding the supplier outcomes of a high firm RPI are generally in line with theoretical expectations. Namely, the managers' views reflect the theoretical supposition that high RPI generally acts to attract suppliers to a greater extent than less innovative firms. The discussion proceeds with an investigation of the proposed capital market impacts from firm RPI.

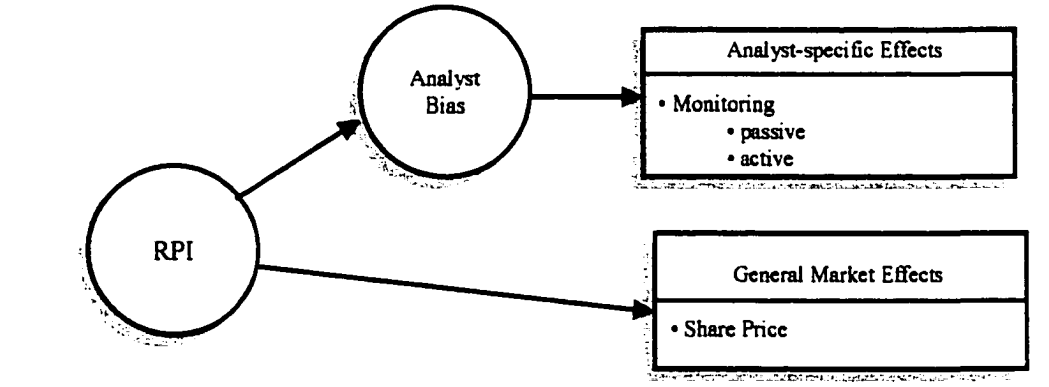
CAPITAL MARKET IMPACT

Signaling theory is an important theoretical perspective offering insight into the proposed relationship between RPI and the capital market. Signaling theory proposes that a firm's claims about their products or any aspect of the company are credible because false claims would lead to a damaged reputation and reduced profits. Within the context of the capital market constituency, firm efforts to signal a high RPI are clear. A perceived high RPI is a tacit signal that the firm will persist in developing innovative new products. The assumption is that a temporal stream of new product introductions will lead to sustained corporate profits and subsequent increased in share prices for public firms. The promise of a long-term revenue flow and presumed subsequent increases in stock prices will logically make the high-RPI firm the focus of financial analyst and investors as each seeks to identify favorable avenues for investment capital. Over time and after successful firm reinvestment in reputation maintenance, financial market interest in the high-RPI firm will likely heighten as the firm's historically successful performance carries some measure of economic certainty in an inherently uncertain environment.

Figure 5.5 highlights the proposed relationships between a firm's perceived reputation for product innovation by analysts and the general market, analyst bias level and the subsequent capital market outcomes that arise from an application of principles form signaling and

institutional theories and an examination of the literature. Each of the variables noted in the figure are subsequently defined and discussed with regard to their inclusion in the proposed capital market model. Hypotheses are presented for each variable. Insight from qualitative interviews with managers is then presented.

FIGURE 5.5
The Capital Market Impact Model of a Reputation for Product Innovation



Analyst Bias. Analyst bias is defined as an analyst's personal relevance with the firm (cf. Greenwald and Leavitt 1984; Petty and Cacioppo 1981; Zaichkowsky 1985). This conceptualization of bias is analogous to the personal relevance conceptualization of individual involvement levels discussed in the Consumer Impact Model of a RPI (see Figure 5.1) and recognizes that analyst bias is dynamic and subject to change. By definition, changes in the antecedents to bias will cause changes in the actual bias level. As with the previous conceptualization of the consumer involvement construct (Bloch and Richins 1983; Zaichkowsky 1986), the antecedents to bias are characterized into three factors: (i) *personal characteristics*, defined as a analyst's inherent value system along with their unique experiences; (ii)

characteristics of the object of interest, defined as the perceived differences between the object and other similar objects; and (iii) *context of the situation*, defined as the salience of the object to the analyst. Changes in one or more of these antecedents may affect individual analyst bias levels, which, in turn, may impact analyst attitudes and behaviors (Zaichkowsky 1986; 1994).

Given this categorization schema, a firm's analyst-perceived RPI is classified as an antecedent to analyst bias. By virtue of signaling a high RPI to the capital market constituency, the signaling firm is attempting to engage analyst bias on the *object* factor antecedent. A high-RPI signal is an indication that the signaling firm will engage in activities designed to enhance firm profitability relative to its industry competitors. Given the *context* of the analyst's job, a high-RPI signal and the 'promise' of increased relative profitability should heighten an analyst's salience for the firm and further positively inflate bias levels. Assuming a history of successful reinvestment in the signal, the analyst bias levels should rise as perceptions of the firm's RPI increase and fall if reinvestment slows or is unsuccessful. The previous rationale offered to motivate the conceptualization of involvement as an outcome of RPI (see Figure 5.1 and associated discussion) also serves to motivate this conceptualization of analyst bias as an outcome of perceived RPI. Analysts can choose from a wide array of firms in deciding where to focus attention and allocate capital resources. The act of signaling a high RPI and the reinvestment in that signal are likely to engage analysts on differing levels. The degree of personal relevance of the firm to the analyst should ultimately determine analyst actions.

Monitoring. When a firm signals a high RPI, it is implicitly expressing to the capital market that it intends to innovate and be a *driver* in its industry. As such, financial analysts interested in identifying investment opportunities can be expected to heighten their monitoring of the firm. Monitoring is defined as the physical or mental engagement of a financial analyst in the

business affairs of a firm. This engagement is either active or passive and its purpose is to develop a better understanding of a firm. Financial analysts are charged with examining firms to make informed assessments regarding their future performance and viability relative to other firms. Active engagement is defined as the physical interaction between an analyst and officers of a firm. Passive engagement entails monitoring the firm without any physical interaction (e.g., examination of public financial data). As analysts are charged with accurately assessing which firms have the greatest probability of outperforming their peers, some monitoring activity is taken as a given.

A high RPI (as perceived by the financial analyst) acts as a signal that a company may outperform competitors and should naturally attracts analyst attention. The greater the analyst-perceived RPI, the greater the personal relevance of the firm (i.e., positive bias) and the greater the proposed attention (i.e., firm monitoring) as analysts interpret RPI as an indicator of past success and a predictor of future success that firms with a relatively lower reputation may not offer. Given the implications of an analyst's company evaluation report (i.e., individual or institutional stock purchases are made or not), a positive bias toward high-RPI firms is likely to arise as these organizations may demonstrate an ability to outperform others and thus reduce some dissonance associated with issuing a company opinion. Analysts are then likely to be predisposed to pay greater monitoring attention to the high-RPI signaling organization as such firms help reduce the uncertainty associated with performance projections.

With few exceptions (e.g., Day and Fahey 1988; Srivastava, Shervani, and Fahey 1998), the marketing literature is relatively mute on the financial market impacts of firm activities. Even accounting and finance literature place little research emphasis on the impact of innovation or new product development on financial market performance. Those studies that exist are tangential in nature to the locus of this study, yet offer insights into how innovation may impact the capital

markets. In line with the resource-based view of the firm (Barney 1991), Srivastava et al. (1998) propose that market-based assets of a firm lead to increased shareholder value – primarily via enhanced cash flow. Market-based assets are defined as *relational* (partnering, co-branding) and *intellectual* (organizational knowledge) and are intangible assets that do not appear on any balance sheet. Yet both have vital impact on market performance and shareholder value. The intangible nature of the assets corresponds with the intangibleness of RPI and provides some support for the view that reputation may influence the capital markets and is worthy of heightened analyst monitoring.

The basic ambiguity surrounding the nature of the causal connections between innovative firm actions and marketplace results (cf. Reed and DeFillippi 1990) may require both deeper and longitudinal investigations by analysts to ensure accurate capital market assessments. This broad analyst interest may, therefore, relate to the notion that it is the *application*, not simply the generation of superior resources that leads to a sustainable competitive advantage (Coyne 1986). Given the inherent impermanence of the capital markets, firms that have exhibited some manner of past stability and success are likely to become personally relevant to an analyst when making investment decisions. This increased relevance is likely to lead to increased attention to and monitoring of the high-RPI firm. As such, an analyst-perceived high RPI can be one measure that positively predisposes analyst opinion while reducing uncertainty, thus allowing for improved decision-making (Day and Wensley 1988). Given this,

H_{21}: The degree of financial analyst bias mediates the positive relationship between the analyst perceptions of a firm's RPI and *passive* monitoring activities by the analyst.

H_{22}: The degree of financial analyst bias mediates the positive relationship between the analyst perceptions of a firm's RPI and *active* monitoring activities by the analyst

Share Price. A firm's signal of a high RPI communicates to investors that the firm, by virtue of its implicit commitment to sustained product development, is committed to economic growth and expansion. Cornell and Shapiro (1987) examine how the *implicit claims* of firms influence stock prices. Whereas explicit claims are those promises or statements by firms that are readily verifiable (e.g., contracts, warranties) by their constituencies, implicit claims (e.g., promise of continuing service, job security) are more nebulous and require some inference on the part of firm constituencies. Cornell and Shapiro's framework suggests that a firm signal of high RPI is easily interpreted as an implicit claim. Individual perceptions of a company's reputation arise from their impression of the organization (Gray and Balmer 1998; Vergin and Qoronfleh 1998). An overtly promoted RPI is an implicit claim of future revenue streams that should positively influence share prices. It should be noted that while share price is arguably conceptualized as a *financial* outcome, it is included here in the *non-financial* outcomes section of the dissertation given its relevance to the capital market constituency and the fact that it is relatively unexplored in the innovation literature as an outcome of NPD initiatives.

Cornell and Shapiro (1987) demonstrate that the market value of a firm (i.e., share price x # of outstanding shares) depends upon its "ability to sell implicit claims" and that such claims operate from both a positive and negative standpoint. If the value of a firm's implicit claims depreciates – either through internal or external negative events – the capital market consequences are reflected in reduced share prices in the same manner that false signals would produce negative consequences. A perceived strong RPI arises from an appreciation of a firm's implicit claims and is proposed to lead to increased share prices. The same firm signals that promote the perception of a positive RPI should also lead to the perception that the company has a better than average ability to compete successfully in the future. In fact, a reputation for product innovation and the

promise of future cash flow may be the driving force in share price valuations for some internet-based firms that rarely produce profits yet are groundbreaking and show potential for future cashflow (e.g. Amazon.com).

In the financial valuation paradigm based on the net present value of future earnings, firms possessing intangible assets, such as a stable of valued brand names or the ability to innovate, should have higher relative net present values because of anticipated incremental earnings beyond those associated with tangible assets alone (Srivastava et al. 1998). The financial markets routinely pay price premiums in excess of book value (i.e., accounting goodwill) for firm stock shares. It is reasonable to expect that a firm with a high perceived reputation for product innovation – an intangible resource – can command a greater market capitalization relative to a less innovative rival by virtue of the implicit signal of reinvestment in the reputation. Therefore,

H_{23}: The greater the perception of a firm's RPI, the greater its relative stock price.

Qualitative Interviews: Capital Market Outcomes

H_{21-22}: Both of these hypotheses center on the impact that analyst bias, as a direct outcome of their perceptions of a firm's RPI, has on the analyst monitoring activity of the firm. Some managers remark that as a firm develops a reputation for product innovation, financial analyst interest in the firm heightens from casual observance to routine monitoring of firm activities. Eventually, interaction between senior management and analysts from various brokerage houses and portfolio fund managers is said to intensify. Some managers remark that innovative firms are increasingly called upon to present organization plans for future products to analyst groups and that analyst interests predominantly focus on the firm's stable of planned initiatives. In essence, a track record of new product successes may lead to heightened analyst pressure on the firm to enlarge its new product pipeline. As an aside, in order to maintain

favorable analyst ratings – and subsequent elevated stock prices – some managers note that the internal pressure to innovate amplifies in an ironic effort to *please* the analysts.

H_{23}: Nearly all of the executives interviewed who offered opinions on the capital market impacts of a firm's RPI believe that high-RPI firms enjoy higher relative stock prices than their less innovative competitors due to their publicly perceived innovation persona. In their opinion, an innovative reputation usually places a firm in a position of leadership in the minds of both the financial professionals as well as the average stock buyer. To quote one executive:

> [I believe that] there is a positive correlation between the company's reputation for innovation and the stock price over a period of time. It may not be positively correlated on a day-to-day basis but if you look at it over several years it usually is.

In general, the views of the managers mirror what one would expect from a conceptual perspective. A high RPI signal and the promise of reinvestment make the firm worthy of scrutiny and a target of capital investment.

SUMMARY

Investigation of the non-financial effects of new product development is scarce in extant literature. Despite repeated calls to broaden and reformulate the research approach to innovation dynamics, much academic inquiry persists in analyzing financial outcomes and their direct-effect determinants. This chapter is conceptual in nature and is designed to present an initial *research roadmap* for further investigation into some of the broader effects of innovation. Principles from signaling and institutional theories as well as an associated empirical literature-based discussion serve to develop constituency-specific models of the non-financial outcomes of a firm's RPI. Specifically, five constituency-specific models detailing proposed outcomes when an organization is perceived as having a high RPI are forwarded. Five key constituencies of the firm and the

proposed outcomes of fostering a reputation for product innovation for each are detailed in this chapter.

Among consumers, a firm's reputation for product innovation is hypothesized to lead to varying degrees of personal involvement. This involvement is proposed to generate excitement, increase loyalty levels, decrease price sensitivity and foster a tolerance for occasional product failure. The proposed internal corporate effects of RPI include greater employee excitement and organizational commitment. Possible downsides to firms include employee perceptions of greater workloads and potential job-related stress relative to that of others within the industry. Competitive benefits are also posited. As firms signal a high RPI, competitors may increasingly engage in reactive, mimetic activities that can give the innovative firm a sustainable competitive advantage. Such responses may heighten as the age and size of the competitor increase. While competitive barriers are proposed to accompany a strong RPI, the threat of employee raiding activities by relatively less innovative competitive firms is also hypothesized to increase.

Certain channel partner implications arising from an associated supplier-perceived RPI are also explored in this chapter. Heightened partnership and exclusivity opportunities with suppliers are hypothesized for the relatively more innovative firms. Along with these opportunities comes the proposition that supplier stress levels may also rise due to ever-increasing expectations by innovative firms. Additionally, the possibility of co-innovation between innovators and suppliers, where there is a mutual infusion of financial or human capital, is forwarded. Finally, the potential impact of a firm's perceived RPI on financial analyst bias levels and the subsequent impact on behavior are addressed. Given the relatively recent phenomenon of greater public interest in the capital markets, financial analysts play an increasingly important role in the modern business environment. As such, gaining a better understanding of how corporate reputation affects

analyst behavior is warranted. Relatively higher perceptions of a firm's RPI can lead to heightened analyst bias levels and greater analyst monitoring and interaction with firm officers. Increased share prices are further hypothesized to correlate with a high reputation for product innovation.

The intent of this chapter of the dissertation is two-fold. One is to broaden the horizons of academic researchers by presenting a guiding conceptual model of the potential non-financial impacts of an innovative product reputation. The introduction of RPI allows researchers to broaden their investigation of new product development beyond the boundaries of financial outcomes. This discourse further shows how various academic disciplines impart knowledge to the innovation researcher as well as how broadly innovation research impacts other disciplines. For managers, this chapter is an attempt to introduce avenues other than sales and share figures as potentially being impacted by a corporate pursuit of innovation. By considering the broader impacts of innovative activities, practitioners are better able to develop effective long-term strategies.

RPI is a perceptual construct and various constituencies are likely to have varying, yet similar, perceptions of a firm. While empirical investigation of the individual models presented in this chapter in their entirety (i.e., all five constituencies) is beyond the bounds of a single study, initial analysis is called for. Therefore, the dissertation proceeds with an empirical validation of both the consumer and company constituencies (see Figures 5.1 and 5.2, respectively). The method used and scale development efforts for each constituency are detailed in Chapter VI and are followed by a presentation of the results.

CHAPTER VI

EMPIRICAL INVESTIGATION OF SELECT NON-FINANCIAL OUTCOMES

INTRODUCTION

Chapter II presents the conceptual development of the Multifaceted Impact Model of a Reputation for Product Innovation (RPI) while Chapter V presents the constituency-specific models. Since reputation is a perceptual construct, each constituency represents one facet of the overall Multifaceted Model of a RPI (see Figure 2.1). Firms must effectively interact with a variety of constituencies including customers, employees and competitors to be successful (Dowling 1986; Freeman 1984; Fombrun and Shanley 1990).

The majority of academic attention in the innovation literature centers on financial outcomes (e.g., sales, share, ROI). This dissertation also focuses on the financial outcomes with a detailed examination in Chapters III and IV. However, another priority of this dissertation is to broaden knowledge regarding the impact of innovation and new product development. The resource-based view of firm competition (Barney 1991) stresses that firms may use both tangible and intangible resources at their disposal to achieve competitive advantage. Firm reputation is a nonimitable intangible resource that is capable of providing firms with a source of *sustainable* competitive advantage (Barney 1991; Rao 1994). Thus, a greater understanding of the ramifications of a corporate reputation can provide managers with another decision-making tool. In this pursuit, an investigation of non-financial outcomes of innovation (e.g., impact of RPI on firm constituencies) is undertaken.

Principles from signaling and institutional theories are combined with associated empirical evidence and senior manager insight to develop a conceptual framework for the non-financial outcomes of innovation. A general framework for the proposed outcomes is presented (see Figure 2.1) and subsequently enhanced through more specific constituency model development (see Figures 5.1 - 5.5). This development answers existing calls for researchers to "move beyond" existing research frameworks in order to advance the field of innovation research beyond its current marginal progress (e.g., Montoya-Weiss and Calantone 1994; Wind and Mahajan 1997).

Attention in this chapter focuses on an empirical evaluation of two facets of the Multifaceted Impact Model of a Reputation for Product Innovation: the consumer and company models. The consumer and company (i.e., employee effects) constituencies are chosen as the focus of investigation because both are noteworthy constituencies to the marketing discipline and because there is conspicuously little research dealing with the impact of reputation on both despite a need for this research (Fombrun and Shanley 1990; Shenkar and Yuchtman-Yaar 1997). The chapter is arranged by constituency and begins with a discussion of pretests and scale development for each. A description of each study, the analytical strategies for each and a reporting of the results follow this discourse. The chapter concludes with a discussion of specific results.

CONSUMER CONSTITUENCY PRETESTS

This section of the dissertation highlights the rationale underlying the product class and specific firms chosen for testing the hypothesized consumer constituency model relationships. Pretests conducted in the course of this selection are detailed below.

Choice of Firms and Product Class

The choice of a product class and subsequent manufacturing firm for use in the empirical investigation of the consumer constituency-related outcomes was a primary concern. The firms used must have a variance regarding consumer perceptions of their RPI yet also have a relatively narrow product base. The variance in RPI perceptions is necessary to elicit statistical variance in the study. An industry that contains multiple firms capable of extracting perceptual variance is also a prerequisite. Likewise, the product class should be readily knowable by consumers and of sufficiently narrow focus that the measure of interest is the object of consumer subject focus. A narrow product base (i.e., firms manufacture a relatively small line of products) eliminates some of the variance in individual perceptions of a firm and allows subjects to focus more closely on the measures of interest. For example, Procter and Gamble produces a wide array of products and gauging specific perceptions of P&G may be more complicated than gauging perceptions of Trek, a prominent bicycle manufacturer. A more focused product line permits subjects to focus more on perceptions of a firm's RPI, for instance, instead of on a myriad of other potential product confounds (e.g., some products are innovative, others are not).

Two consumer pre-tests were administered to elicit unaided recollections of firms with relatively high, medium and low reputations for product innovation. Business school undergraduate subjects (cumulative n = 120) were asked to indicate three firms (from any industry) with a "strong reputation," three with a "moderate reputation," and three with a "weak reputation" for product innovation. The unaided responses resulted in a list of several potential firms from various industries (e.g., consumer food products, computer software/hardware, automobiles).

Automobile manufacturers were ultimately chosen as the industry domain for this study. Automobile manufacturing firms are generally well known to an adult subject population, provide a range of perceptions as to the innovativeness of automotive products and allow for a more focused product line (as opposed to a food manufacturer, for example). While other industries and product classes (e.g., computer software/hardware) arose as alternatives to the automobile industry, an overlap of product lines (e.g., Hewlett-Packard), a blurring of personnel and corporate reputations (e.g., Dell, Microsoft), or a lack of variance in manufacturers within an industry (e.g., Coca-Cola, Pepsi Cola) left automobiles as the best alternative.

The goal in the specific choice of automobile manufacturers in this study was to capture firms with a range of consistent consumer perceptions (i.e., high/medium/low) regarding RPI. This was necessary to avoid any bias that might result from researchers erroneously choosing an individual firm that rests at either end of the innovative reputation continuum. After pre-testing numerous automobile firms on their RPI scores (cumulative $n = 412$), Ford, Mazda and Hyundai were selected as the manufacturers with statistically distinct ($p \leq .05$) RPI scores that also spanned the high/medium/low spectrum of reputation perceptions, respectively. While the individual firms are not as important to the findings as the consumer perceptions of the firm's product innovativeness, care was taken to avoid any skew in manufacturer perceptions and to provide subjects with firms most likely to elicit a broad range of perceptions.

CONSUMER CONSTITUENCY SCALE/MATERIAL DEVELOPMENT

Scale development for the consumer constituency model follows established marketing paradigms forwarded by Churchill (1979) and Gerbing and Anderson (1988). Whereas some scales for model variables exist, others require some modification while still others are originally

developed for this study. For each of the study's scales, the procedure of specifying the domain of each construct, generating scale items, collecting data from an appropriate subject pool and engaging in iterative scale purification and further data collection is used (cf. Churchill 1979). The development of each scale used in this section of the study is discussed next.

Independent Measures

Reputation for Product Innovation (RPI). Since no scales for RPI or related constructs exist, RPI scale items were developed using executive interviews, the relevant literature and small consumer focus group input as a guide. A 20-item scale was initially developed and appears in Appendix B. This scale was pretested with 62 adult subjects to derive a more concise and parsimonious RPI scale. Ultimately, a seven-item Likert-type summated rating scale was constructed to measure a firm's reputation for product innovation. The scale appears in Appendix C. A confirmatory factor analysis of pretest adult subjects using the principle component analysis extraction method revealed that all seven scale items loaded on one factor (all components > .76) and that the scale had a Cronbach's reliability coefficient of .92 (n = 62). Follow-up tests, to determine the robustness of the seven-item RPI scale, were conducted across twelve different product lines. Across these subsequent pretests (cumulative n = 412), all reliability coefficients exceeded .91.

There is limited empirical evidence that various facets of corporate reputation are correlated and may potentially represent a single, latent construct (Fryxell and Wang 1994; Rowe, Cannella, and Harris 1998). Thus, a concern in developing and testing the RPI scale was that the effects attributed to a firm's reputation for product innovation not be confounded with other facets of corporate reputation. A confirmatory factor analysis was conducted to determine the discriminant validity of the RPI scale. Business school graduate and undergraduate students rated

a prominent automotive manufacturer via a 24-item survey. In addition to the RPI scale, items measuring other key facets of reputation – as determined from a review of the literature – were measured. The other facets measured were firm reputations for quality, value, social responsibility and pricing aggressiveness in addition to an overall general corporate reputation. These facets of reputation are the subjects of existing empirical investigation and represent facets of reputation that are both prominent and a potential source of confound for the RPI scale. Scale items for these five measures of reputation were sourced directly from existing scales without modification.

Principle components extraction with Varimax rotation and Kaiser Normalization was performed. Four components were extracted. The results appear in Table 6.1 and indicate that a firm's RPI, as measured by the seven-item scale, loads on a single component. Further, no other facets of reputation load on the same component indicating that RPI is operationally pure (i.e., *distinct* from the other facets of reputation measured and from an overall corporate reputation). A *pure* variable is only correlated with one component whereas a *complex* variable may be correlated with several (Tabachnick and Fidell 1996). Some overlap among the other measured facets of reputation is noted, supporting the previously noted assertions of Fryxell and Wang (1994).

Involvement. Consumer involvement with the firm under investigation was measured using the Zaichkowsky (1994) Personal Involvement Inventory (PII) scale (all reported alphas > .90). The Zaichkowsky PII scale was originally developed to measure the personal relevance levels that individuals held toward a product. The 10-item summated rating scale was employed virtually unchanged from its original structure and was used to measure the degree of personal relevance that a consumer had for a given firm. The only change to the original scale is that the point of reference in this study is a firm versus the original Zaichkowsky reference to a product.

The scale was pretested using automotive manufacturers as the point of reference. Subjects in this and subsequent scale development discussions were undergraduate Business school students (n = 86). The reliability coefficient for the pretest was .94 and the dissertation scale measures appear in Appendix C.

TABLE 6.1
Factor Loading Results for Facets of Corporate Reputation

Scale Item	Component 1	Component 2	Component 3	Component 4
RPI 1	.674			
RPI 2	.888			
RPI 3	.796			
RPI 4	.890			
RPI 5	.882			
RPI 6	.914			
RPI 7	.768			
Quality 1				.616
Quality 2				
Quality 3				.603
Value 1				
Value 2			.816	
Value 3			.704	
Value 4			.807	
Social Responsibility 1		.856		
Social Responsibility 2		.614		
Social Responsibility 3		.789		
General Reputation 1		.671		
General Reputation 2				.819
General Reputation 3		.765		
General Reputation 4				.853
Pricing Aggressiveness 1				
Pricing Aggressiveness 2			.799	
Pricing Aggressiveness 3				
Percentage of Variance	26.58%	17.00%	15.55%	15.38%

Factor loadings less than .60 are omitted to facilitate better interpretation of table results.

Dependent Measures

Excitement Toward the Firm. A five-item Likert-type summated rating scale was developed to measure the excitement that consumers have toward a firm. The Mano and Oliver (1993) scale (reported alpha = .90), originally designed to measure the dimensionality of the consumption experience (the "positive affectivity") for consumers, was used to develop a scale to capture the excitement level that consumers have toward a firm. Four semantically applicable items scale were borrowed from the original Mano and Oliver ten-item scale and one term (i.e., "motivated") was added to create the revised scale. See Appendix C for the final scale construction. Other items (e.g., "determined," "alert," "proud") from the original scale were not included in the dissertation scale because they were deemed to be non-germane to the *excitement toward the firm* domain (cf. Churchill 1979). The Mano and Oliver scale was a five-point scale but the final measure used here is a seven-point scale in keeping with all other scales used. The scale is anchored by 'strongly agree' and 'strongly disagree.' The reliability coefficient for the scale in the pretest was .92.

Overall Firm Image. A five-item semantic differential scale was used to measure consumer perceptions of a firm's overall or general image. The Mishra, Umesh, and Stern (1993) four-item scale was used in its original form (reported alphas > .89). The Mishra et al. scale was developed to measure the degree of perceived popularity that a specified brand has among consumers. A high score suggests that an individual believes that the brand is popular. The only modification of this scale was the addition of one new item anchored with 'weak image' and 'strong image.' This item was added because it directly assesses a consumer's perception of overall firm image. Additionally, the locus of investigation for the scale is a firm as opposed to a

brand. The Cronbach reliability coefficient for the resulting five-item scale was measured in pre-tests as .89 indicating a good level of reliability. The scale appears in Appendix C.

Propensity to Pay Price Premiums. This scale was developed using the Lichtenstein, Ridgeway, and Netemeyer (1993) and the Srinivasan, Narasimhan, and Ratchford (1991) scales (reported alphas = .85 and .83, respectively) as guides. A domain-oriented goal in the development of this scale was to capture a consumer's degree of price consciousness and intention to "shop around" for lower prices. Both scales examined the external search and shopping behavior of consumers when faced with a purchase decision. The Lichtenstein et al. measure captures a consumer's willingness to expend time and energy to purchase grocery items at the lowest prices. The Srinivasan et al. measure captures the time, energy and effort that a consumer expends on the information search process before buying an automobile.

As prescribed by Churchill (1979), a six-item Likert-type summated rating scale was developed to measure the degree to which consumers are willing to pay a price premium for a given firm's product. Using these two scales as guides, six statements were developed to capture the propensity to pay a premium for an automobile purchase. This scale was subjected to pretest. Results of the pretest indicated that three of the items were not internally consistent (i.e., item-total correlations < .50) and these items were subsequently dropped. "I would spend a lot of time negotiating with salespeople when deciding on the purchase," "I would spend a lot of time haggling about the purchase price," and "I would not go to extra effort to find low prices" were the three excluded items. Despite the loss of those three items, the purified three-item scale used in the empirical analysis still captures the essence of the propensity to pay and had a pretest alpha equal to .86. The complete scale appears in Appendix C.

Loyalty to the Firm. A six-item Likert-type summated rating scale appears in Appendix C and was derived using the Raju (1980) and Beatty and Kahle (1988) scales (reported alphas = .70 and .75, respectively) as sources for scale items. The Raju scale measures the degree to which a person reports being loyalty prone for a variety of product categories (e.g., food, airlines, appliances). The Beatty and Kahle measure captures the degree to which a person expresses loyalty to a brand of soft drink. Both scales are germane to the domain of interest in this study.

This scale was developed for the dissertation to measure the loyalty that consumers have toward a given firm. The dissertation scale items, developed from the two prototype scales, were reworded to be more in accord with the focus of the current investigation. Some items from the existing scales such as "Even though certain food products are available in a number of different flavors, I always tend to buy the same flavor" and "I would prefer to keep using old appliances and gadgets even if it means having to get them fixed, rather than buying new ones every few years" were not used because they were deemed not applicable to the automobile product class under investigation in this study. The six-item scale was subjected to pretests and the pretest reliability coefficient for the revised measure was .80.

Tolerance for Occasional Failure. A seven-item scale was developed to measure a consumer's tolerance for occasional product defects from a given firm. With no extant scale basis for item development, initial items were developed via extended deliberation and referral to customer satisfaction literature (e.g., Miller 1979; Woodruff et al. 1983). The objective of this scale was to capture consumer's attitude toward minor defects that might be associated with an automobile purchase – specifically, their attitude toward the manufacturer. In light of this, seven scale items were developed and eventually retained in the measure. The resulting summated rating scale, appearing in Appendix C, was subjected to prestesting in the manner of each of the

preceding scales and in accord with Churchill's (1979) marketing constructs paradigm. The resulting pretest alpha equaled .82.

CONSUMER CONSTITUENCY STUDY METHOD

Subjects in the consumer constituency study were 273 adults sourced from two distinct subject pools. One set of subjects was parents of children registered in a local area cheerleading and drill team organization (n = 153). A second set of subjects was parents of a local youth orchestra (n = 120). Each organization received a two-dollar donation in return for each fully completed survey. Fully completed surveys were defined as surveys having no unanswered items. Participants knew of this donation in advance of completing the survey.

Subjects were further entered into a raffle for either one month of free organization tuition or a gift certificate at a local café. This was accomplished with a cover page on each survey. The raffles were held approximately one week after the surveys were completed and two winners were awarded to each organization. Subjects could voluntarily enter the raffle or not by signing their name to the cover page and the majority of respondents chose to do so. After checking each survey for completeness, the raffle cover page was removed prior to data entering. Four surveys were deemed unusable because of incomplete answers resulting in a final n of 269, or a 98.5% inclusion percentage.

By design, six different survey booklets (three manufacturers x two presentation orders) were randomly distributed to subjects. Each subject received a booklet containing the independent and dependent measures. The first page of the booklet contained general instructions and explained that the consumer study examined an automobile manufacturer and that subjects would be expected to provide certain opinions and perceptions regarding that firm. Subjects then

reviewed a short description of the automobile manufacturer. This description was consistent across manufacturers with only the differing name of the three manufacturers (i.e., Ford, Mazda and Hyundai) distinguishing the descriptions. Subjects were then instructed to complete the survey measures.

As a precaution to mitigate any effects of common response bias, the order of presentation of the RPI scale balanced between the first and last scale completed by the subjects following the suggestions of Podsakoff and Organ (1986). In other words, approximately half of the subjects completed the RPI scale first while the remainder completed it last. The order of the remaining measures was consistent across survey booklets. This precaution was taken to determine if completing the predictor scale first, for instance, might influence subsequent consumer evaluation of the criterion effects.

ANALYTICAL STRATEGIES

In the consumer constituency analyses, consumer involvement is hypothesized to mediate the relationship between RPI and the proposed consumer non-financial outcomes. In essence, the effect of RPI on consumer outcomes ($H_{1\text{-}5}$) is proposed as an indirect effect with involvement serving as an intermediary variable. Regression is the statistical method chosen to analyze the relationship between a firm's reputation for product innovation, consumer involvement level and the subsequent consumer outcomes detailed in Figure 5.1.

The mediation of involvement is tested by using a series of three regression equations as prescribed by Baron and Kenny (1986) whereby the predictor variable (i.e., RPI) is regressed on the mediator variable (i.e., involvement) in equation number 1, the predictor variable is regressed on the criterion variable (e.g., excitement toward the firm) in equation 2 and both the predictor and

mediator variable are regressed on the criterion variable in equation number 3. To establish mediation, three conditions must be met:

(i) the predictor variable must impact the mediator variable in equation 1.

(ii) the predictor variable must impact the criterion variable in equation 2.

(iii) the mediator must impact the criterion variable in equation 3.

"Perfect" (i.e., complete) mediation is supported if the predictor variable's impact in equation 3 has no statistically significant effect when the mediator is controlled (Baron and Kenny 1986). If this statistical condition holds in the results, it theoretically indicates that a reputation for product innovation (RPI) only impacts the outcome(s) through the indirect effect of consumer involvement level. As such, in the absence of consumer involvement, RPI would have no theoretical impact on the consumer outcome(s).

"Partial" mediation is supported if the beta value for the predictor variable in equation 3 is less than its beta value in equation 2. If this statistical condition holds in the results, it theoretically indicates that, while RPI impacts consumer outcomes via the mediation of the involvement construct, other mediating or moderating variables may influence the relationship. Findings of partial mediation suggest that the search for additional or other factors is called for. Following, alternative methods of analysis and empirical results are detailed.

Alternative Methods of Analysis

Several other methods are available to test the consumer constituency hypotheses. The measures of consumers are continuous with no discrete variables used in the analyses. Given the mediation hypotheses, multiple regression, path analysis or structural equations modeling (SEM) are each applicable to the task. Path analysis could test the indirect effect of RPI on consumer outcomes by determining the relationships between RPI and involvement (i.e., path *a*) and between

involvement and the specific outcome (i.e., path *b*). The indirect effect is assessed by multiplying *a* x *b* yet the result does not indicate whether the mediation is *perfect* or not.

In general, SEM is an improvement on path analysis because the relationships are examined free from measurement error (i.e., there is no error term in the equation). Measurement error is estimated and subsequently removed from the causal equation leaving only common variance among the factors of interest (Tabachnick and Fidell 1996). With this improvement over path analysis comes the downside of increased complexity and ambiguity (Tabachnick and Fidell 1996). Given that SEM roughly equates to the simultaneous execution of factor analysis and multiple regressions, regression is a statistical alternative offering somewhat less interpretive ambiguity. The scale development efforts taken for both constituencies and the resulting reliability coefficients for each measure indicate that the measurement of the constructs is relatively strong. The structural portion of an SEM analysis is, therefore, similar to a 'regression' between the various factors of interest. Hence, regression provides us with a plausible and straightforward method for investigating the consumer model. Given the ability to assess partial or perfect mediation via the Baron and Kenny (1986) method noted previously, multiple regression is chosen as the statistical method for examining the consumer constituency.

CONSUMER CONSTITUENCY RESULTS

Table 6.2 presents a synopsis of the hypotheses for the Consumer Impact Model of RPI and the empirical support result for each one. A description of the findings for each hypothesis then follows.

TABLE 6.2

Consumer Constituency Hypotheses and Results

H_i	Empirical Finding
H_1: Consumer involvement mediates the positive relationship between consumer perceptions of a firm's RPI and consumer excitement toward the firm.	Supported
H_2: Consumer involvement mediates the positive relationship between consumer perceptions of a firm's RPI and a consumer's overall image of the firm.	Supported
H_3: Consumer involvement mediates the positive relationship between consumer perceptions of a firm's RPI and consumer propensity to pay price premiums.	Not Supported
H_4: Consumer involvement mediates the positive relationship between consumer perceptions of a firm's RPI and consumer loyalty to the firm	Supported
H_5: Consumer involvement mediates the positive relationship between consumer perceptions of a firm's RPI and consumer tolerance for occasional product failure.	Supported

Excitement Toward the Firm (H_1)

Results from the regressions of RPI as mediated by consumer involvement on consumer excitement toward the firm are detailed in Table 6.3. It is clear from Table 6.3 that involvement mediates the relationship between RPI and consumer excitement levels. Equation 1 shows the statistically significant relationship between RPI and involvement ($p \leq .05$). Equation 2 likewise indicates that RPI has a significant main effect impact on consumer excitement levels ($p \leq .05$). Finally, regression equation 3 denotes the statistically significant relationship between involvement and consumer excitement, cumulatively fulfilling each of the prerequisites to establish the mediation of consumer involvement (cf. Baron and Kenny 1986) and supporting H_1. Adjusted R^2 results for models 1-3 are .40, .43 and .52, respectively. Each model is statistically significant ($p \leq .05$).

TABLE 6.3
Regression Results for Consumer Excitement Toward the Firm

Model Equation	ß	Standard Error	VIF
1. RPI → Involvement	.63*	.06	1.00
2. RPI → Excitement Toward Firm	.66*	.04	1.00
3. RPI → Excitement Toward Firm	.42*	.04	1.67
Involvement → Excitement Toward Firm	.38*	.03	1.67

* Statistically significant at $p \leq .05$. df = 268.

Overall Firm Image (H_2)

Table 6.4 highlights the statistical relationships among RPI, consumer involvement and the positive overall image of the firm across all subjects and provides statistical support for H_2. The relationship between RPI and involvement is statistically significant ($p \leq .05$) as is the main effect of RPI on firm image ($p \leq .05$) as noted in model equations 1 and 2, respectively. Equation 3, denoting the relationship between predictors RPI and involvement and firm image, shows that involvement mediates the relationship between RPI and overall firm image. Adjusted R^2 results for models 1-3 are .40, .47 and .52, respectively. Each model is statistically significant ($p \leq .05$).

TABLE 6.4
Regression Results for Overall Firm Image

Model Equation	ß	Standard Error	VIF
1. RPI → Involvement	.63*	.06	1.00
2. RPI → Firm Image	.69*	.04	1.00
3. RPI → Firm Image	.50*	.04	1.67
Involvement → Firm Image	.30*	.04	1.67

* Statistically significant at $p \leq .05$. df = 268.

Propensity to Pay Price Premiums (H_3)

The third hypothesis, proposing that consumer involvement mediates the relationship between RPI and consumer propensity to pay a price premium for a firm's product, is not supported by the data. Table 6.5 denotes the specific relationships among the variables. While RPI significantly impacts involvement ($p \leq .05$), the positive relationship between RPI and propensity to pay price premiums is not supported in model equation 2. The results detailed in equation 3 further fail to support the proposed relationships. Counter to the hypothesis, the investigated relationships (equations 2-3) are negative and are statistically significant.

TABLE 6.5
Regression Results for Propensity to Pay Price Premiums

Model Equation	ß	Standard Error	VIF
1. RPI → Involvement	.63*	.06	1.00
2. RPI → Propensity to Pay Premiums	-.33*	.03	1.00
3. RPI → Propensity to Pay Premiums	-.20*	.04	1.67
Involvement → Propensity to Pay Premiums	-.21*	.03	1.67

* Statistically significant at $p \leq .05$. df = 268.

Loyalty to the Firm (H_4)

Table 6.6 highlights the statistical relationships among RPI, consumer involvement and consumer loyalty to the firm across all subjects and provides statistical support for H_4. Once again, model equation 1 shows the statistically significant impact of RPI on involvement. Equation 2 denotes the significant relationship between RPI and firm loyalty ($p \leq .05$) while the relationship of involvement on loyalty to the firm is supported in equation 3 ($p \leq .05$). Therefore, the mediation of involvement between RPI and firm loyalty is affirmed. Adjusted R^2 results for models 1-3 are .40, .32 and .39, respectively. Each model is statistically significant ($p \leq .05$).

TABLE 6.6
Regression Results for Loyalty to the Firm

Model Equation	ß	Standard Error	VIF
1. RPI → Involvement	.63*	.06	1.00
2. RPI → Firm Loyalty	.57*	.04	1.00
3. RPI → Firm Loyalty	.34*	.04	1.67
Involvement → Firm Loyalty	.36*	.03	1.64

* Statistically significant at $p \leq .05$. df = 268.

Tolerance for Occasional Failure (H_5)

The proposition that involvement mediates the relationship between RPI and consumer tolerance for an occasional product failure (H_5) is likewise supported by the data and denoted in Table 6.7. The impact of RPI on involvement noted in model equation 1 is significant ($p \leq .05$) as is the main effect of RPI on the criterion variable ($p \leq .05$) detailed in equation 2. The effect of involvement on consumer tolerance for failure shown in equation 3 is also statistically supported ($p \leq .05$). Cumulatively, the empirical evidence supports the hypothesis that consumer involvement mediates the relationship between RPI and consumer tolerance for an occasional product failure. Adjusted R^2 results for models 1-3 are .40, .29 and .32, respectively. Each model is statistically significant ($p \leq .05$).

TABLE 6.7
Regression Results for Tolerance for Occasional Failure

Model Equation	ß	Standard Error	VIF
1. RPI → Involvement	.63*	.06	1.00
2. RPI → Tolerance for Failure	.54*	.04	1.00
3. RPI → Tolerance for Failure	.39*	.05	1.67
Involvement → Tolerance for Failure	.24*	.04	1.67

* Statistically significant at $p \leq .05$. df = 268.

The discussion now focuses on the empirical investigation of the company constituency. Presentation of material follows in the same manner as that for the consumer constituency. This chapter concludes with a discussion of the results for both constituencies.

COMPANY CONSTITUENCY SCALE/MATERIAL DEVELOPMENT

Scale development for the company constituency model is in line with procedures used for the consumer constituency model and followed established marketing paradigms forwarded by Churchill (1979) and Gerbing and Anderson (1988). Whereas some scales for model variables exist, others required some modification while still others were originally developed for this study. For each of the study's scales, the procedure of specifying the domain of each construct, generating scale items, collecting data from an appropriate subject pool and engaging in iterative scale purification and further data collection was employed (cf. Churchill 1979). The development of each scale used in this section of the study is discussed below.

Scale Development Subject Pool

Subjects in each of the following pretest scale development initiatives were 30 business managers sourced from a diverse group of firms and representing multiple functional areas: Engineering (24%), MIS (21%), Marketing (14%), Product Development (10%), Management (17%), Sales (3%), Other (10%). This range in functional areas was important to scale development efforts, as a firm-wide perspective on the constructs of interest is imperative to avoid a potential bias in results from any singular function.

The managers were current students in an Executive MBA program at a leading university. The use of current managers as scale development subjects was necessary to assure that the measures were developed within a sample population relevant to the subject domain of interest. Of the executive pretest subjects, 97% were self-classified as either middle or senior managers having a mean of 16.4 years of business experience and direct involvement with an average of 11 new product introductions. Both the level of responsibility and the span of service indicate that the pretest subjects possessed an ability to accurately capture the opinions of a wider managerial population.

The pretest managers were presented with a booklet containing the independent and dependent measures noted subsequently. The first page of the booklet contained general instructions and explained that the survey examined the attitudes and opinions of managers toward the organizations where they were currently employed. One survey was deemed unusable due to incomplete information leaving a final pretest subject pool of 29. The results of the scale development survey were presented to the executives in a subsequent MBA class as part of a lecture on brand and firm reputation.

Independent Measures

Reputation for Product Innovation (RPI). The RPI scale used for the company constituency is a modification of the RPI scale developed earlier (see Consumer Constituency Scale Development; Appendix C). Since reputation is perceptual and individually constructed by each constituency, the original RPI scale was modified to capture the opinions of internal company employees. The words "my company" were substituted in place of the automobile manufacturer's name in the original consumer constituency examination of RPI. Therefore, the core of the original scale was retained with minor wording changes administered to make the scale more appropriate to the company constituency. The resulting seven-item Likert-type summated rating scale appears in Appendix D. The revised scale was pretested using the executive subjects noted previously. The pretest reliability coefficient for the scale was .95. All item-to-total correlations in the pretest exceeded .94.

Culture of Innovation. With no direct model for developing a scale for a culture of innovation, this scale was constructed using executive interviews and related literature (e.g., Booz-Allen & Hamilton 1982) as a guide. Existing governance structure scales were also consulted although none were eventually used as guides. Scale items were developed to capture the tenets of a culture of innovation as described in the non-financial outcomes Model Development section (see Company Constituency) of Chapter V. Namely, a corporate culture of innovation is comprised of: (i) a long-term orientation, (ii) realistic goal setting, (iii) a tolerance of failure and (iv) a corporate commitment to innovative initiatives.

An eight-item summated rating scale anchored by 'strongly agree' and 'strongly disagree' was developed. Two scale items with relatively low item-to-total correlations (after assessing pretest results) were eliminated. These items were "At my company, occasional employee

mistakes are accepted by management as a 'cost of doing business'" and "Senior management's expectations regarding my job performance are often un-reasonable." Despite the elimination of these two items, the remaining scale items adequately capture the construct of interest. The resulting six-item scale used in the main survey instrument is detailed in Appendix D. The pretest Cronbach reliability coefficient for the revised scale was .83 with all item-to-total correlations exceeding .53.

Dependent Measures

Excitement Toward Work Tasks. A five-item Likert-type summated rating scale was developed to measure the excitement that employees have toward their typical work tasks by using a modification of the Mano and Oliver (1993) scale (reported alpha = .90) originally used to measure the dimensionality of the consumption experience. Four items, semantically applicable to testing the level of excitement toward typical work tasks, were borrowed from the original Mano and Oliver ten-item scale. One term (i.e., "motivated") was added to create the revised scale. Certain Mano and Oliver scale items were not retained in the dissertation scale (e.g., "determined," "alert," "proud") because they were not applicable to the construct of interest here (cf. Churchill 1979). The final measure was a seven-point scale anchored by 'strongly agree' and 'strongly disagree.' The scale appears in Appendix D. The reliability coefficient for the final measure in the scale development pretest was .95 with the lowest item-to-total correlation reported for the scale items being .82.

Workload. A nine-item, seven-point summated rating scale anchored by 'strongly agree' and 'strongly disagree' was constructed using the Reilly (1982) 13-item scale as a guide. The Reilly measure captures the degree to which people perceive themselves to be under pressure due to having multiple roles and was designed to measure "role overload." This perception of overload

ties well with the proposition of increased workload as an outcome of RPI expressed in Chapter V (see Company Impact) and serves as a strong model for scale development. The reported alpha for the Reilly scale was .88.

The nine-item measure used in the scale development pretest was developed using minor wording changes to the Reilly scale. The changes centered on making the point of reference for each item the respondent's work tasks as opposed to a general sense of role overload. Certain original scale items were omitted from the dissertation scale due to an impression of excessive redundancy (e.g., "I don't ever seem to have time for myself;" "I just can't find the energy in me to do all the things expected of me") and in the interest of scale parsimony. The nine-item scale was pretested in accord with that of the other measures. After reviewing pretest results, one item ("I seem to have more commitments to overcome than my peers at other companies") was dropped and the resulting eight-item scale was used in the final survey. It appears in Appendix D. The pretest reliability coefficient for the revised measure was .89. All item-to-total correlations in the pretest exceeded .50.

Job-related Stress. To measure perceptions of job-related stress, the House and Rizzo (1972) scale, originally designed to measure job-induced tension arising from job requirements (all reported alphas $\geq$ .82), was used as a template. The House and Rizzo wording was retained for six items. One original item ("I sometimes feel weak all over") was deemed inappropriate to the locus of investigation here and was not used. "When I am at work, I feel calm" and "At the end of the work day, I do not feel anxious" were two items original to this study that were added to the six House and Rizzo items for scale development.

An eight-item Likert-type scale anchored by 'strongly agree' and 'strongly disagree' was subsequently constructed and pretested. One item ("I often 'take my job home with me' in the

sense that I think about work while doing other things" – original to the House and Rizzo measure) was eliminated due to a relatively low item-to-total correlation. The final scale, shown in Appendix D, had a pretest reliability coefficient equal to .82 with all item-to-total correlations exceeding .47.

Job Performance Expectations. With no existing scales available to measure this hypothesized effect, referral to the performance expectations literature (e.g., Binning and Lord 1980; Downey et al. 1979) and executive interviews provided the foundation for development of a scale to measure the perception of heightened job performance expectations. Both are germane sources to the domain of the measure. The goal in developing this scale was to create a measure that captured a perception that senior management performance expectations at one organization were relatively higher/lower than expectations at a competitor's organization.

With the above goal in mind, a seven-point, eight-item summated rating scale was constructed with 'strongly agree' and 'strongly disagree' used as scale anchors. Two initial scale items were removed from the final survey after the pretest revealed relatively low item-to-total correlations for both. These items were "With each new product introduction that we have, expectations for the next one always increase" and "I am expected to constantly perform at a high level." Among the remaining items, however, the essence of the two deleted items is adequately captured. Pretest results from the managerial subject pool indicated a revised Cronbach reliability coefficient equal to .88 with all item-to-total correlations in excess of .59 indicating that the remaining items are drawn from the appropriate domain (Churchill 1979). The final scale appears in Appendix D.

Organizational Commitment. Several scales for organizational commitment are available in the literature. The scale constructed for this dissertation was adapted from the 15-item

Mowday, Steers, and Porter (1979) organizational commitment scale (reported alpha = .90). The Mowday et al. measure captures the degree to which an employee reports being actively involved with a particular organization. Ten of the more relevant fifteen scale items from the Mowday et al. scale - with minor wording changes to better reflect the current locus of investigation - were used to construct a measure for this investigation. The five items not utilized were deemed as overly redundant or not directly applicable to this study (cf. Churchill 1979). They were: "I talk up this organization to my friends as a great organization to work for;" "This organization really inspires the very best in me in the way of job performance;" "I am extremely glad that I chose this organization to work for over others I was considering at the time I joined;" "Often I find it difficult to agree with this organization's policies on important matters relating to its employees;" and "I really care about the fate of this organization."

A 10-item summated rating scale was constructed and subjected to pretest scale purification. The ten items retained for pretest had minor wording changes from the original Mowday et al. study. After pretesting the items on managerial subjects, relatively low item-to-total correlations for four items resulted in those items being dropped from the final scale. They were: "I am willing to put in a great deal of effort beyond what is normally expected to help my company succeed;" "I would accept almost any type of job assignment to continue working for my company;" "I could easily work for some other company as long as the work tasks were similar;" and "There's not too much to be gained by remaining employed by my company indefinitely." Pretest results indicated that all item-to-total correlations for the final six-item scale exceeded .65 while the revised reliability coefficient was .88. The scale is highlighted in Appendix D.

Attention now turns to a description of the subjects and survey method used for both the consumer and company constituency studies. These sections are followed by an investigation of

applicable statistical methods available to investigate the non-financial outcomes of a reputation for product innovation. Finally, a presentation and subsequent discussion of results are presented for each constituency.

COMPANY CONSTITUENCY STUDY METHOD

The method employed in testing the company constituency model is discussed next. The process of subject selection, subject contact methods utilized and the ultimate subject sample profile is noted.

Subject Selection and Method

Subjects in the company constituency study were sourced from multiple functions. The target subject population was mid- to upper-level managers from a variety of functional areas within product manufacturing firms. Mid- to upper-level managers were the primary audience sought because these individuals, by virtue of their relatively higher position in a firm, were more likely than entry level personnel to have sufficient tenure with an organization and industry to provide assessments based on experience rather than conjecture.

Further, multiple managers within each firm were specifically sought to ensure that varied perceptions within a given firm were captured to the greatest extent possible. The rationale behind this action was to avoid single respondent bias whereby the impressions for an entire organization are attributed to a single respondent. Given the perceptual nature of many of the constructs of interest in this dissertation (notably RPI), it is reasonable to assume that the responses from multiple subjects within a single organization might differ, if only slightly.

A further goal in the method design was to identify industries that would contain firms with a range of innovativeness (e.g., from new product pioneers to followers). This range allows

for statistical variance in the constructs being measured. Each industry must be comprised of product manufacturers in keeping with the product innovation domain used throughout the dissertation. Individual SIC classifications with relatively narrow product lines were sought to mitigate any influence that having multiple product lines (and thus multiple points of reference) might have on manager's perceptions.

Ultimately, firms from four 4-digit SIC industrial groupings met the selection criteria and were contacted: Surgical and Medical Instruments (SIC #3841, n = 127); Sporting and Athletic Goods (SIC #3949, n = 53); Industrial and Personal Paper (SIC #5113, n = 19); and Woman's Fashion (SIC #s 2331-2339, n = 45). Firms were both private and public. Neither holding companies, subsidiaries, individual divisions nor joint ventures were contacted in an effort to exclude those organizations where perceptions might be influenced by factors other than those of the direct company of interest. Contact information, including names, addresses, titles and telephone numbers, was sourced from *The Corporate Yellow Book*, the *National Register Publishing Master Index of Private/Public Firms* and *Ward's Business Directory*. The contact person sought for each respective firm was the Vice-President of Product Development, R&D or Marketing. If no such positions were found at any firm, the officer with job responsibilities deemed most closely aligned to new product development was contacted. In each contact letter, the general purpose of the research study was explained and the recipient was asked to refer us to the most appropriate person within the organization if it was someone other than the person initially contacted. This occurred on five occasions.

One week after mailing the initial contact letter asking for participation in the study, letter recipients received a personal telephone call to assess their interest in participating in the dissertation research. Each recipient was informed of this impending telephone follow-up in the

original letter. A Public Policy Institute at a major university was contracted to make the telephone calls. A phone bank of five individuals was used and all initial calls occurred within a three-day period. If the contact person at each company was not reached a message was left stating the purpose of the call and a toll-free telephone number was provided for them to return our call. Each individual was called up to three separate times or until contact was made. All potential contacts were made within twelve days of the first call. In all, 91 firms declined to participate in the research. Reasons for declining included that the organization was not very innovative and therefore wasn't germane to the study (a self-selection out of the study) and or a fear of disclosing confidential information. The primary reason for declining to participate was a stated "lack of time" or that individuals were "too busy" to participate.

Ultimately, 244 companies were sent survey booklets. The breakdown by SIC group in previously noted. Each company was mailed four copies of the survey booklet containing the independent and dependent measures. A cover letter, instructing the contact manager to distribute the surveys to four managers from different departments, was included as was a separate facsimile sheet that the contact person could use to express any interest in receiving a copy of the research results and appears in Appendix E. Twenty-four facsimiles noting interest in the results were received. Each survey contained a self-addressed, pre-stamped envelope for mailed return. A postcard was mailed to the contact managers approximately 7 days after the initial mailing as a reminder to complete and return the surveys (cf. Dilman 1978, pp. 180-8). The first page of the booklet contained general instructions and broadly explained the purpose of the survey. As was the case with the consumer survey booklet, the order of presentation of the RPI scale was balanced between the first and last scale completed to mitigate any biasing effects that could

potentially arise from completing the RPI scale first (cf. Campbell and Fiske 1959; Podsakoff and Organ 1986).

Respondent Profile

The response rate per SIC group is as follows: Surgical and Medical Instruments (n=22, 17.3%); Sporting and Athletic Goods (n=11, 20.7%); Industrial and Personal Paper (n=5, 26.3%); and Woman's Fashion (n=3, 6.6%). This equates to a 16.8% response rate over all groups. As mentioned previously, one concern in the development of this study was the effort to mitigate any adverse effects due to single respondent bias. Of the firms responding, the average number of respondents per firm is 2.4. This indicates that the opinions offered are a relatively better approximation of attitudes and perceptions at the firms than if a single respondent had been used.

The functional/departmental makeup of the respondents as a percent of the total subject population is: accounting/finance (6.1%); engineering (6.1%); information technology (2.0%); marketing (14.1%); R&D/product development (17.2%); distribution (2.0%); human resources (1.0%); management (13.1%); production (4.0%); and sales (9.1%). 19.2% state that their job responsibilities bridge two or more functional areas. This diversity in departmental makeup indicates that results are not likely to be slanted by the opinions of one or a few functional areas. On a self-rating, the executive subjects classify themselves as 47% senior level, 48% middle level and 5% entry level management. This rating coincides with the goal of subject pool makeup sought in the study. Finally, the subjects have an average of 17.7 years of business experience and have experienced an average of 49.3 product introductions over that time.

Focus now turns to an explication of the statistical options to measure the non-financial outcomes of a reputation for product innovation. This discussion is immediately followed by a presentation of the results.

ANALYTICAL STRATEGIES

Again, several methods are available to test the relationships posited in the company constituency. As with the consumer constituency, measures in the company constituency are continuous with no discrete variables used in the analysis. A discussion of the various methods follows. The direct effect relationships posited in the company constituency model allow for simple correlations, SEM, multiple regression and MANOVA as statistical tests of the company specific hypotheses. Given the multiple dependent variables (i.e., company effects) and a single criterion variable (i.e., RPI), MANOVA is one statistical option. The advantage of using MANOVA is the ability to simultaneously analyze multiple dependent variables, thus improving the chance of uncovering relative effects across dependent variables. One downside, however, is that the predictor variable (e.g., RPI) must be discrete in order for the method to be used. Dichotomizing the continuous RPI variable would fail to *account* for the true variance in RPI, however, and render the findings suspect.

Another deficiency of MANOVA is the operational difficulty in accurately assessing the unique effects attributed to each dependent variable. Since the method recombines the existing dependent variables into a dependent "variate" for analysis, attribution of causality is questionable as determinations of how RPI impacts the respective outcomes using MANOVA is more of a logical exercise than it is a statistical one (Tabachnick and Fidell 1996). The previous discussion regarding the use of SEM and regression applies to the company model as well and is not repeated here. The simplicity of the consumer impact model, however, indicates that causal modeling methods offer no real interpretive improvement over simple correlations or regression. To

maintain consistency across models and to apply a statistical method that fits the hypothesis-testing situation, regression is employed to test the company constituencies as well.

COMPANY CONSTITUENCY RESULTS

Table 6.8 highlights the regression results for hypotheses six through eleven using the individual responses as input. Table 6.9 highlights the regression results for the same hypotheses using the firm level responses (i.e., average of individual responses within each firm used as a single data point) as input. The results for the test of the impact of RPI on job-related stress levels also appear in each table. Following this table, each of the proposed effects and their resulting findings are subsequently noted. This is followed by an initial discussion of the constituency results for the non-financial outcomes of fostering a reputation for product innovation.

TABLE 6.8
Individual Level Regression Results for the Company Impact Model of RPI

Hypothesized Relationship	ß	SE	R^2 (Adj.)
H_6: Culture of Innovation → RPI	.42*	.14	.18 (.17)
H_7: RPI → Excitement Toward Work Tasks	.23*	.05	.05 (.04)
H_8: RPI → Workload	-.05	.09	.01 (.00)
H_9: RPI → Performance Expectations	.26*	.06	.07 (.06)
H_{10}: RPI → Organizational Commitment	.38*	.07	.15 (.14)
H_{11}: RPI → Job-Related Stress	-.04	.10	.01 (.00)

* Statistically significant at $p \leq .05$. df = 98.

TABLE 6.9
Firm Level Regression Results for the Company Impact Model of RPI

Hypothesized Relationship	ß	SE	R^2 (Adj.)
H_6: Culture of Innovation → RPI	.66*	.24	.44 (.42)
H_7: RPI → Excitement Toward Work Tasks	.79*	.07	.62 (.61)
H_8: RPI → Workload	.45*	.08	.21 (.19)
H_9: RPI → Performance Expectations	.62*	.05	.38 (.37)
H_{10}: RPI → Organizational Commitment	.75*	.06	.57 (.56)
H_{11}: RPI → Job-Related Stress	.14	.08	.02 (.00)

* Statistically significant at $p \leq .05$. df = 40

Culture of Innovation (H_6)

Results from the regression of a corporate culture of innovation on employee perceptions of RPI indicate that a culture of innovation does have a positive impact on employee perceptions of the firm's reputation for product innovation. The findings from Table 6.8 and 6.9 point out that firms that have a long-term strategic orientation, set realistic product development goals, are tolerant of occasional failure and support ongoing innovation initiatives will foster employee perceptions of a corporate RPI and thus provides support H_6. Further, this hypothesized relationship has one of the largest relative effect sizes (ß= .42) across the individual level regressions of any of the factors explored in the company constituency model. The adjusted R^2 for the models are .17 and .42 for the individual and firm level models, respectively.

Excitement Toward Work Tasks (H_7)

The seventh hypothesis is also statistically supported by the data in Tables 6.8 and 6.9. Just as consumer excitement is heightened by a firm's positive RPI (see H_1), employee excitement

toward work tasks is also inflated by their perception of a firm's RPI. Hence, a favorable reputation for product innovation is a factor in fostering positive work attitudes among employees. The data indicate that employees of more innovative firms approach their typical work tasks with more enthusiasm than peers at less innovative firms. Model R^2 (adj.) for the individual and firm analyses equal .04 and .61.

Increased Workload (H_8)

The hypothesis that a reputation for product innovation leads to employee perceptions that their typical workload is greater than that of counterparts at other companies (H_8) is not supported by the individual data yet is supported by the firm level data. In essence, support for one of the proposed negative outcomes of ardently pursuing innovative initiatives is mixed with this subject population. While the absolute workload levels for employees was not broached, the individual respondents in this sample do not perceive their typical workloads to be relatively greater than those of peers at other organizations. Taken on aggregate, however, the mean perception is that workloads at high-RPI firms are perceived to be greater than at relatively less innovative competitors.

Job-Performance Expectations (H_9)

The hypothesis that RPI has a positive impact of employee perceptions of senior management job performance expectations (H_9) is supported by the data presented in Tables 6.8 and 6.9. Here, subjects at higher RPI firms perceive that the job demands at their firms are relatively higher than demands at competitive organizations. *Post hoc* discussions with the managers used in the scale development initiatives may provide some rationale for the apparent disconnect between support for H_9 and the results for H_8 and job-related stress (see Discussion section to follow). While, on an individual level, the absolute workload levels at firms with a

positive RPI may not be perceived as being greater than those at competitors (e.g., number of new product introductions), the relative expectations of senior management (e.g., the proficiency of new product introductions) are perceived to be greater at more innovative firms. In other words, employees may perceive typical work tasks to be fairly consistent within an industry. However, employees at high-RPI companies interpret senior management expectations of work task execution to be higher than that at other firms. Whether this perception is actually driven by management expectations or is self-induced is a matter for subsequent investigation.

Organizational Commitment (H_{10})

The hypothesis that a firm's reputation for product innovation will positively impact employee organizational commitment (H_{10}) is supported by these data. Among the hypothesized non-financial company outcomes, this effect is the largest in relative magnitude ($\beta = .47$, $p \leq .05$) for the individual data and the second largest ($\beta = .75$, $p \leq .05$) for the firm level data with adjusted model R^2 values of .14 and .56, respectively. The theoretical supposition that employees who perceive a congruency between corporate and individual values (O'Reilly et al. 1991) are more likely to exhibit greater organizational commitment finds support in these results and provides senior mangers with the knowledge that an innovative reputation can play a part in retaining employees.

Job-Related Stress (H_{11})

The investigation of whether RPI leads to increased stress levels among employees indicates that job-related stress in not an outcome of a high reputation for product innovation. Decidedly, RPI explains none of the variance in the stress construct (adjusted $R^2 = .00$ for both models) and the standardized beta value for this subject population is not distinct from a null effect. These data do not support H_{11}.

DISCUSSION

The following is a discussion of the specific empirical results for the Consumer and Company Models of a Reputation for Product Innovation. An overall discussion of the findings and implications for both financial and non-financial research initiatives follows in Chapter VII.

Consumer Constituency

The results presented in Tables 6.3 – 6.7 provide support for four of the five consumer-specific hypotheses investigated. A firm's high reputation for product innovation positively impacts consumer involvement level that, in turn, heightens the relevance of that firm in the consumer's mind. This indicates that involvement levels are dynamic and supports belief detailed in the literature (Zaichkowsky 1986) that a strong reputation may lead to a receptive consumer audience. This increased receptivity can equate to consumer excitement toward the firm, which can motivate consumers to seek out new product offerings from that firm.

Other results suggest that an enhanced overall corporate image is an outcropping of a positive RPI. As consumers increasingly associate a firm with product innovation, the overall relevance of the organization improves and perceptions of product superiority are likely to arise. Of great consequence is the finding that a high reputation for product innovation augments consumer loyalty levels. Thus, signaling a high RPI and reinvesting in that reputation can pay off in long-term, loyal consumers. Finally, the finding that a RPI can lead to consumer tolerance for occasional product failure is noteworthy in that managers can take some comfort that a consumer-perceived high RPI provides some form of consumer buffer in the event of a product 'failure.' This finding also supports the signaling theory premise that constituents can infer that the high-RPI firm will reinvest in its reputation and thus have some assurance that occasional failures will

be remedied. It also supports the manager's view that high-RPI firms possess some competitive advantages that their less innovative rivals do not.

The only hypothesis that failed to find support was the supposition that a high RPI allows firms to charge a price premium in comparison to less innovative rivals (H_3). One explanation for the lack of support for H_3 may simply be that RPI and its effect via consumer involvement fails to impact a consumer's propensity to pay a price premium over offerings from a less innovative competitor and that this belief is not valid. This runs counter to the stated theoretical rationale however. One explanation that consumers will nearly always search for a lower cost product regardless of sentiment toward or perception of a firm does not coincide with a body of research revealing that nearly 50% of consumers regularly fail to engage in price shopping behavior (cf. Dickson and Sawyer 1990) and is an unlikely explanation.

An alternate explanation for the lack of support may rest in the fact that the product evaluated by the consumers was an automobile – a relatively *high-ticket* item – and that consumer price consciousness is consistent with the purchase behavior for most expensive products whereas this consciousness is less for more moderately priced goods. For this second explanation to hold the same consumer evaluation scales would need to be captured for lower cost items and the results then compared across higher and lower cost items. To determine if H_3 may be contextual, a follow-up survey was designed and is discussed subsequently.

To better interpret the lack of support for H_3, a follow-up investigation was undertaken using a convenience sample of 194 undergraduate business students as subjects. The purpose of this investigation was to determine if the hypothesized impact of RPI and involvement on a propensity to pay price premiums is contextual. To buttress this investigation, one must first establish that the convenience sample population mirrors the original sample. The test can then be

applied to a different context and the difference in the two results analyzed. Thus, a first step is to ensure that the student subjects in the follow-up survey completed measures relating to their perceptions of the same automobile manufacturers as in the original survey (Ford, Mazda and Hyundai). As such, half of the subjects completed the same survey (i.e., automobiles) as in the original investigation. The remaining subjects completed a survey using clothing as the product in question. The original consumer survey scale items, appearing in Appendix C, were slightly modified to reflect the change in product. The wording was altered to pertain to clothing manufacturers instead of automobile manufacturers. Surveys were randomly distributed to the subjects in the same manner as in the original study. One survey was deemed unusable resulting in 193 total usable surveys for the inquiry.

Again, the purpose for surveying this group of subjects with regard to the automobile product class was to ensure that results from this convenience sample generalized to those of the initial population. The results of the automobile survey (n = 98) mimicked those of the initial subject population with minor, interesting deviations. In essence, the results for the factors consumer excitement, enhanced firm image, heightened firm loyalty and tolerance for occasional failure reveal the same pattern of relationships indicated in the initial survey. Two notable additions were observed, however. For both heightened firm loyalty and tolerance for failure, consumer involvement was a "perfect" mediator thus providing stronger support for $H_{4\text{-}5}$. As with the original investigation of the propensity to pay price premiums, H_3 was not supported in this subsequent investigation. Neither RPI nor involvement was statistically related (all p's > .05) to the propensity to pay criterion variable. Given these complementary results, one can place greater faith in the generalizability of the findings from this second subject population.

Clothing manufacturers were chosen as the domain within which to test H_3 in another context. Clothing manufacturers were selected because they are readily recognizable by a large group of the subject population and because clothing represents a *lower-ticket* purchase item to compare to automobiles. After conducting a consumer pre-test using 48 undergraduate Business school students as subjects to uncover clothing manufacturers with relatively high, medium and low reputations for product innovation Gap, Old Navy and Wal-Mart were selected as the firms with statistically distinct ($p \leq .05$) RPI scores having a statistical variance in opinion regarding the perception of RPI. The three are the focus of investigation in the follow-up survey.

Subjects were randomly presented a booklet containing the measures outlined previously. As with each of the previously noted consumer investigations, six survey booklets (three manufacturers x two RPI presentation orders) were randomly distributed to subjects. Format and instructions were the same as in the original automobile surveys with minor wording changes made to reflect the change in product focus. The regression results for H_3 within a clothing manufacturer setting are reported in Table 6.10. As with results in the automobile setting (see Table 6.5), RPI has a positive and statistically significant impact on consumer involvement levels in the clothing setting. However, RPI is not statistically related to propensity to pay price premiums as shown in Table 6.10 equation 2 while a negative and significant relationship was reported in Table 6.5. Equation 3, while indicating statistically significant relationships with RPI and involvement on propensity to pay, does not give rise to evidence of mediation given that

TABLE 6.10
Regression Results for Propensity to Pay Price Premiums (Clothing Setting)

Model Equation	ß	Standard Error	VIF
1. RPI → Involvement	.33*	.11	1.00
2. RPI → Propensity to Pay Premiums	-.14	.06	1.00
3. RPI → Propensity to Pay Premiums	-.23*	.06	1.12
Involvement → Propensity to Pay Premiums	.29*	.05	1.12

* Statistically significant at $p \leq .05$. df = 94.

equation 2 was not statistically significant (cf. Baron and Kenny 1986). Adjusted R^2 results for models 1-3 are .10, .01 and .07, respectively.

Hence, the hypothesis that consumer involvement level mediates the relationship between a firm's RPI and the propensity to pay price premiums is not supported in either of the two contextual settings investigated. In fact, the impact of RPI on propensity to pay is mixed across the two settings. What is constant across both contexts is that consumer involvement levels appear to have a positive and significant impact on a consumer's propensity to pay a premium to the broader competitive market. Thus, involvement may be the more relevant driver of this purported consumer behavior with RPI playing a role in shaping involvement levels, albeit a small one.

A limited amount of unsolicited feedback from subjects indicated that if they had no intention of purchasing a particular product, they answered in the negative for this scale. In other words, if some subjects had no intention of purchasing a Hyundai, for example, they answered in a manner indicating that they would not shop around for other cars and would not spend time haggling with the salesperson – answers that are consistent with a positive propensity to pay price

premiums. Thus, another potential source for the lack of support may lie in the scale items themselves. The scale appears in Appendix C and measures a consumer's propensity to pay price premiums *within* a firm's brand. If a consumer's decision-making process is better conceptualized as an *across* brands approach, the existing scale may fail to adequately measure this variable.

A more detailed discussion of the consumer constituency results and their implications can be found in Chapter VII of this dissertation. The focus now turns to a discussion of the company investigation.

Company Constituency

The results presented in Table 6.8 provide support for four of the six company-specific hypotheses investigated. The firm level results from Table 6.9 provide support for five of the six hypotheses. Caution should be used in interpreting the results from Table 6.9 however, given the relatively low degrees of freedom. Results indicate that a corporate culture of innovation is coupled with employee perceptions of its reputation for product innovation. Specifically, a positive culture of innovation leads to heightened employee perception of a positive firm RPI. This RPI, in turn, leads to other notable company outcomes. For instance, we find that employees who perceive their firm to have a high RPI are relatively more excited about their typical work tasks and that this relationship is relatively strong. This finding indicates that RPI can play an intangible and non-monetary role in eliciting employee enthusiasm.

Along those lines, a high RPI also leads to heightened organizational commitment. This relationship is also relatively strong. Given the results that employees at relatively high-RPI firms are more excited than peers at less innovative counterparts, it follows that those employees should exhibit greater organizational commitment. The positive correlation between organizational commitment and employee perceptions of a firm's RPI is an important indication that monetary

remuneration is not the sole means of motivating and retaining valued employees. Along with this greater excitement and organizational commitment goes the perception that job performance expectations at an innovative firm are relatively greater than those at less innovative companies. While typical workloads may be perceived as relatively equal across industry competitors (i.e., from the individual level data), the perceptions of greater senior management expectations may be considered par for working at an innovative company.

The hypothesis that finds no support in these data presents some interesting and useful insights, especially in light of the findings regarding job-related stress. It is noted in the conceptual discussion of this effect that scholarly thought on the origins of workplace stress is mixed. Theoretical rationale suggests that there should be some level of employee stress associated with employee perceptions of a high firm RPI. The results in this study support the notion that employee stress may relate more closely to individual disposition that to employee-firm value congruency (Brief and Atieh 1987) and that employees will self-select their place of employment. Employees who perceive the RPI of their firm to be high may actually seek out the innovative initiatives present in innovative firms.

While *post hoc* discussions with the subjects in this study were not possible due to the anonymity of the survey design, these results mirrored results obtained in the scale development phase of this study. Therefore, the 30 executive subjects surveyed in the scale pretest initiative were asked to elaborate on the findings. Their comments regarding job-related stress levels are insightful and potentially profound from a human resource standpoint. The general opinion of the *post hoc* interviews was that managers expected a negative relationship between RPI and stress levels. Some managers indicated that stress is actually less at innovative firms because employees view these firms as accomplishing something that will lead to a more meaningful work experience.

Their rationale was that the innovative pace – including a potentially heavy workload – at their firms is exactly what makes their work exciting and relatively "stress-free." While working for an innovative firm will undoubtedly entail a certain amount of work-related tension, this is distinguished from work-related stress. Actually, a *lack* of innovation initiatives was noted as a potential source of stress. The results from this research, however, fail to find a relationship between RPI and stress and indicate that stress is likely to be more self-induced that environmentally induced.

Finally, the hypothesis that a firm's reputation for product innovation impacts employee perceptions of a heightened workload finds mixed support in these data. The lack of individual level support for this proposal may indicate that employees at firms with reputations for both relatively high and low RPI's view their typical workloads as in line with the typical work requirements at peer organizations. Conversely, the firm level data projects the opposite conclusion and supports the theoretical view that high-RPI firms signal that the workloads required to reinvest in the firm's reputation are relatively high. Thus, while individual perceptions of workload will naturally vary, group level perceptions indicate that a high employee-perceived RPI may lead to perceptions of high relative workload, in general, within a high-RPI firm.

The constituency models forwarded in this dissertation represent a synthesis of theoretical development and associated empirical evidence regarding the impacts that a high reputation for product innovation has on several constituencies of the firm. This chapter focuses on the hypothesized impacts of a firm's reputation for product innovation on its consumer and company (employees) constituencies. Support is found for eight of the eleven hypotheses (9 of 11 using firm level company data). The dissertation concludes with a discussion and implication of the findings from this investigation of the multifaceted impact of innovation.

CHAPTER VII

SUMMARY AND CONTRIBUTIONS

INTRODUCTION

New product development (NPD) is widely considered to be a potential source of competitive advantage for firms as indicated by continuing corporate R&D investments and the plethora of new items introduced into the market each year. Understanding the dynamics of NPD is of obvious practical benefit as greater understanding leads to more effective and efficient strategy and ultimately to competitive advantage and favorable financial outcomes. In recent years, the innovation literature has witnessed a tremendous growth in research designed to enhance the NPD process. Yet, while new products can be a source of competitive advantage, the advantage may not always be *sustainable*. New products are capable of providing firms with a competitive advantage, but their relatively tangible nature can lead to imitation or substitutability. Both of these can decrease the advantage gap that a firm may have over competition. A sustainable competitive advantage arises when the possibility of competitive resource duplication is low (Barney 1991). For an advantage to be classified as sustainable, it must be perceived as different from competitors in important attributes and be the result of a capability gap versus competition. Finally, both this difference and the gap must endure over time (Coyne 1986). Thus, firms should also compete on less tangible, and therefore less imitable, resources in order to achieve some measure of sustainable advantage.

A corporate reputation is widely considered to be an intangible resource capable of delivering a sustainable competitive advantage to firms (Aaker 1989; Fombrun 1996; Fombrun and Shanley 1990; Hall 1992; Rao 1994; Weigelt and Camerer 1988). Recent corporate

communications such as annual reports and advertisements overtly promote the perception of certain firms as highly innovative companies. 3M, Hewlett-Packard, International Paper, Daimler-Chrysler and Lucent are among those firms that aggressively promote this high product innovation image. While the strategic value of a firm's reputation is widely assumed, there is little empirical evidence to support the assertion. In sum, a better academic understanding of how innovative firms can use both tangible and intangible resources to achieve sustainable competitive advantage can lead to more effective strategic prescriptions. As such, investigations of both financial (e.g., sales, share, ROI) and non-financial (e.g., impact on consumers and employees) outcomes of innovation are presented in this dissertation.

One objective of this research is to examine the various determinants that drive financial outcomes to determine: (i) what are the drivers of new product performance; (ii) what are their respective relationships with performance (i.e., positive or negative); (iii) what is the relative magnitude of each determinant of performance; and (iv) what covariate factors contribute to the noted variance in extant empirical estimates. The goals for the financial outcomes section of the dissertation are accomplished via a meta-analysis of the empirical evidence. The relationships between 24 new product development determinants and marketplace performance are presented. The relative direction and magnitude of each determinant's relationship with marketplace performance is also presented. Factors that may account for some of the extant empirical disparities are additionally investigated.

The investigation of financial outcomes contributes to the literature by presenting researchers and managers with a single reference point detailing the determinants of NPD performance. While the empirical evidence supports the hypothesized relationship with market performance for many determinants, other relationships are called into question. Results further

reveal the fact that a relatively few number of determinants appear to drive market performance. The dissertation investigation of financial outcomes of innovation provides scholars with an indication of which determinants may provide the greatest potential for scholarly insight. It concurrently provides managers with a parsimonious list of performance determinants allowing them to focus on relevant drivers when formulating strategy.

A second objective of this dissertation research is to take an initial step in explicating the impact that a perceived reputation for product innovation (RPI) has on various constituencies of the firm. While one finds considerable evidence in the business community that some firms actively signal the perception that they are innovative, scholarly investigation of the impacts of such actions is lacking. The non-financial outcomes investigations in the dissertation seek to discover: (i) what is a corporate reputation for product innovation and how is it measured and (ii) what are the constituency-specific (e.g., consumers, employees) effects of signaling such a reputation? The second objective is met by the development of a Multifaceted Impact Model of a Reputation for Product Innovation.

The conceptual model of non-financial outcomes begins to address how firms may use reputation as a marketing strategy tool by providing a framework of the less tangible, non-financial outcomes of corporate innovation initiatives. Using principles from signaling and institutional theories, the RPI construct is conceptually developed for each of the five firm constituencies. That is, RPI is developed to represent the independent perceptions of each of the constituencies. A scale to measure two of the constituency's (consumer and employee) perceptions of RPI is developed and the relative impact in these two key constituencies is empirically investigated. Just as firms are proposed to compete on the basis of their tangible and intangible resources, emerging research indicates that individuals also form personal judgments about firms

on both tangible and intangible firm aspects (Brown and Dacin 1997; Wansink 1989). Thus, it is important for researchers and managers to gain a better understanding of how both types of resources can be maximized to achieve sustainable competitive advantage.

This chapter continues with a summary of the results for the financial and non-financial outcomes investigations. The implications and proposed contributions of this dissertation then follow. A discussion of the limitations of the research and potential avenues of future research conclude the dissertation.

SUMMARY OF FINANCIAL OUTCOMES FINDINGS

In this section, findings from the meta-analysis of the determinants of financial outcomes are organized and presented by the four general categories of new product determinants: product characteristics, firm strategy characteristics, firm process characteristics and marketplace characteristics.

Product Characteristics

The findings from the data show that product advantage and meeting customer needs are the relatively dominant product characteristic determinants of market performance. Having a product advantage, defined as a perceived superiority/differentiation over competitive products, has the greatest statistical impact – among the 24 determinants of performance – on market performance in a multivariate context (see Tables 4.5 and 4.6). Among the remaining product-related determinants, the extent to which a new product is perceived as technologically sophisticated is positively correlated with marketplace success. The association between the degree to which consumer price perceptions of a new product are favorable and financial outcomes is also positive and statistically significant. As expected, each of the preceding four

determinants exhibits a positive correlation with market performance across bivariate and multivariate examinations. These findings imply that developing a new product that is perceived to meet the needs of consumers, is appropriately priced, is technologically sophisticated and has a perceived differentiation to competitive offerings will lead to positive marketplace results.

Of the five hypotheses for product characteristics determinants, only the proposed positive relationship of the degree of product innovativeness with successful marketplace performance (H_{4A}) receives mixed results. Bivariate analysis fails to support the hypothesis, the matrix regression analysis (see Table 4.6) indicates that product innovativeness is a statistically significant determinant of market performance, and dummy variable regression (see Table 4.5) shows that it is positive and not statistically distinct from the average effect (r = .28) of all 24 predictors. The lack of support in the bivariate setting may be due to the relatively large effect size variance found in the literature (see Table 4.3) for this determinant. Given the degree of multivariate support for the positive relationship and the lack of bivariate support, additional academic investigation of the relationship between product innovativeness and market performance is needed before any empirical generalizations can be stated for this variable.

Product advantage is a dominant determinant of market performance. However, there is some question regarding the usefulness of the construct from a managerial perspective. The definition and operationalization of product advantage is so broad that one would not realistically expect to find results to the contrary. Yet, this broadness does not permit researchers to offer fundamentally sound prescriptive advice. In order for managers to initiate effective strategies with regard to product advantage, a clearer understanding of the facets of product advantage is called for. Analysis of facets such as product price (see Tables 4.3 and 4.5) and product quality or customization (see Emerging and Idiosyncratic Paradigms of Innovation) represents an initial

attempt to more accurately understand the composition of product advantage. A better understanding of the construct's makeup would allow for better strategic prescriptions.

Firm Strategy Characteristics

Among the firm strategy determinants, dedicating human and R&D resources to new product development initiatives are among the strongest relative bivariate relationship with market performance. This implies that specifically devoting personnel to NPD initiatives (e.g., product champion; developmental team) improves a firm's chances for successful market performance. Likewise, allocating financial support for such initiatives is also positively related to market success.

The association between marketing synergy and financial outcomes is also positive while the relationship between financial outcomes and technological synergy is not supported in a bivariate setting. Multivariate examination of these determinants is mixed (see Table 4.5); yet, when both are analyzed in a parsimonious multivariate model (see Table 4.6), both determinants are positively and significantly correlated with performance. The findings from Table 4.6 imply that firms should enter into NPD initiatives that require technological and marketing skills that are congruent with the existing skills of the firm. The mixed findings for the relationships between the degree of synergy and marketplace performance, however, warrants additional study before any concrete statements about the relationships are explicitly forwarded. Finally, being a market pioneer is also positively correlated with successful financial outcomes and suggests that order-of-market-entry is a statistically significant determinant of performance thus supporting the assertion of a first mover advantage.

Firm Process Characteristics

In this highly investigated group of determinants, only two (market orientation [H_{10}] and cross-functional integration [H_{11}]) failed to support the hypothesized positive relationship with market performance in a bivariate setting. However, the positive impact of firms having a market orientation (MO) on performance is supported in both multivariate examinations. The lack of bivariate support for MO may be partially due to the low reliability statistics reported in the literature. The lack of support across all levels of analysis for the hypothesized positive impact of cross-functional activities on financial outcomes is intriguing. The simple mean correlations with performance are positive for both cross-functional relationships with performance (see Table 4.3). In the dummy variable regression findings, cross-functional integration is not statistically different from the mean effect of all 24 variables while cross-functional communication is significantly less impactful than the grand mean effect. Cross-functional integration, relative to the other predictors, posts a significant negative relationship with market performance in the matrix regression analysis (see Table 4.6). Together, these results question the apparent academic and managerial consensus that cross-functional interaction is a positive pursuit.

While the association between the use of a structured approach to NPD initiatives and financial outcomes is supported in extant bivariate findings, the relationship in both multivariate models is not significant. The implication is that a structured approach is significantly correlated with performance when analyzed as an individual factor but that it has no relative effect on performance when analyzed with the remaining determinants. Being proficient at various firm tasks (e.g., marketing, technological, pre-developmental) in the innovation process are the leading bivariate predictors of marketplace success. These findings receive multivariate support as well

and imply that simply performing NPD tasks may be insufficient if they are not performed proficiently.

Finally, the association between the degree of reduction in NPD cycle time is a positive and statistically significant antecedent to marketplace performance finding support across all statistical models. The findings suggest that reducing the time from product ideation to product introduction leads to market success. Likewise, the relationship between the degree of senior management support for an initiative and performance is positive and significant. This finding implies that top management support of a NPD initiative has a positive impact on ultimate marketplace performance.

Marketplace Characteristics

Entering markets where the potential for growth either exists or can be facilitated is crucial to product performance. Market potential posts a positive and statistically significant correlation with performance and supports the intuitive assessment that success is more likely if products are introduced in a favorable market environment. The impact of competitive response to a new product introduction is relatively large and has a negative effect on financial outcomes. While earlier research indicates that competitive activity has no substantive effect on new product performance, the dissertation findings support an emerging academic opinion that competitive response is detrimental - at least in the short term - to market performance.

The proposed negative impact of competitive response intensity on marketplace performance (H_{14}) fails to find support in the bivariate data, which may explain why some early literature did not espouse a negative relationship. A variance in sample size and scale measurement reliability may account for some of this bivariate discrepancy (see Table 4.3). Multivariate examination of the relationships however indicate that the relationship is significantly

less than the average effect across all 24 determinants (see Table 4.5) and that it is a significant negative determinant of financial outcomes in a parsimonious multivariate exploration (see Table 4.6). The mixed results indicate that further academic exploration is necessary to accurately assess the impact that competitive response intensity to a new product introduction has on the ultimate product performance. However, the findings suggest that, in relation to other determinants in multivariate models, competitive response intensity is a negative and significant antecedent to successful new product performance.

A better understanding of the financial outcomes of innovation allows managers to focus on those drivers of marketplace performance that are most pertinent and relatively more impactful to them. However, this knowledge alone is insufficient. Researchers also need to investigate the non-financial outcomes of innovation in order to foster a more complete understanding of the multifaceted impacts of innovation. A better knowledge of the non-financial impact of a firm's RPI on its constituencies may help managers to formulate strategies that can potentially deliver a sustainable competitive advantage. The discussion now turns to a summary of the non-financial outcomes findings from the dissertation.

SUMMARY OF NON-FINANCIAL OUTCOMES FINDINGS

A main thrust of the investigation of non-financial outcomes in this dissertation is to construct a guiding model for how a corporate reputation for product innovation (RPI) impacts firm constituencies. Such a model serves to organize thought on the potential impact of a RPI. A general model of these proposed relationships is presented in this dissertation (see Figure 2.1). Therefore, before discussing the empirical results derived from a test of two key constituencies some discourse on the general model development efforts is warranted.

Conceptual Model Development

To compete successfully, organizations must effectively interact with a number of different constituencies. Each constituency has a unique, yet related, relationship with an organization. Just as firms compete for competitive advantage, they also vie for reputational status among their respective constituencies (Fombrun and Shanley 1990). Some researchers suggest that firms actively promote the development of a corporate reputation in an attempt to influence their constituents (e.g., Dowling 1986; Freeman 1984) and evidence offered in this study supports this assertion. Action-specific reputations may influence constituent behavior and ultimately impact firm profitability. For example, a firm's reputation for aggressively competing with deep price discounts (e.g., Kraft Foods) signals the 'cost of doing business' to competitors and can act as a tacit barrier to competition. Likewise, a company's reputation for being environmentally friendly or socially responsible (e.g., Ben and Jerry's) may influence certain like-minded consumers to loyally purchase their products over those of competitors not possessing a similar reputation.

Signaling theory (Spence 1973) states that firms possess certain intangible attributes that are subject to manipulation and serve to 'signal' individuals and ultimately shape their beliefs and behaviors. The risk of negative economic consequences (e.g., loss of investment in reputation, loss of future profits) from sending a false signal indicates that firms will reinvest in activities designed to foster the original impression. Institutional theory (Selznick 1957) suggests that the various constituencies of a firm are interrelated and that these interactions will, over time, result in distinctive outlooks that become normative or *institutionalized.* Conceptually, the active signaling of a high RPI and the continued reinvestment in that signal should influence the behavior of the firm and each of its constituents. The proposed outcomes of signaling and reinvesting in a high

RPI are the foci of the non-financial outcomes section of the dissertation. Principles from both signaling and institutional theories are combined with associated empirical evidence to develop the Multifaceted Impact Model of a Reputation for Product Innovation that explores the proposed non-financial outcomes of innovation.

The discussion now focuses on the specific empirical findings pertaining to the proposed non-financial outcomes of a corporate reputation for product innovation. The implications and contributions of both the financial and non-financial inquiries then follow.

Consumer Constituency-related Findings

In total, four of the five hypotheses forwarded for the consumer constituency are supported by the data. Consumer's perceptions of a firm's reputation for product innovation (RPI) directly and positively impact upon consumer involvement levels, where involvement is defined as an enduring personal relevance with the firm. The resulting consumer involvement level affects consumer perceptions and actions in a variety of ways.

For one, results indicate that consumers exhibit greater levels of excitement toward the innovative firm. This excitement arises from the presence of high levels of involvement and may lead to a predisposition toward consumer satisfaction. In essence, consumer involvement level – the direct consequence of consumer perceptions of a firm's RPI – may seed the expectation of satisfaction even before product consumption. The resulting excitement toward the firm is also likely to motivate consumers to seek out other product offerings of the firm and to eagerly anticipate any subsequent new product offerings. In essence, consumer-perceived RPI positively shapes consumer attitudes and behavior by influencing consumer involvement levels.

In addition to generating excitement toward the firm and its products, RPI leads to an enhancement of the general image of the firm. By directly influencing consumer involvement

levels, innovative firms (as perceived by consumers) may be better able to position themselves and their products as the ideal reference point within the minds of consumers (cf. Carpenter and Nakamoto 1989). As consumers become psychologically engaged by the activities of the innovating firm, their overall perceptions of the firm are enhanced (Bloch and Richins 1983; Zaichkowsky 1986). Additionally, the empirical results indicate that consumer-perceived RPI, acting through its influence on consumer involvement levels, heightens consumer loyalty toward the firm and its products. The ramifications of this heightened loyalty are positive for the innovative firm. By definition, more loyal consumers are less apt to purchase products from competitive companies and usually remain loyal over an extended period of time. This loyalty may result from both a physical and emotional connection with the innovative firm.

The hypothesis predicting consumer tolerance for an occasional product failure from a firm with a positive consumer-perceived RPI is also supported by the data. The interesting effect noted in this study is that consumers are more tolerant of product failures from the relatively more innovative firms. The implication is that a positive consumer-perceived RPI may ultimately act as a competitive tool by shaping consumer expectations for all competitors within an industry. As consumers perceive a history of firm innovativeness, expectations for products from the innovative firm and its competitors will arguably rise. However, as expectations rise for all firms, firms with a relatively lower consumer-perceived RPI are not recipients of the same tolerance for product failure.

It is hypothesized that a reputation for product innovation leads to the ability to command a price premium versus competitors (H_3). Results indicate that perceptions of a positive RPI do not ultimately reduce consumer price sensitivity. In fact, the relationship investigated using the automobile product category (see Table 6.5) shows a statistically significant negative relationship

between both RPI and involvement and the propensity to pay price premiums. There are several potential answers to why this belief fails to find support from these data. One potential answer, explored in a follow-up survey (see Table 6.10), is that the purchase of automobiles (a relatively high cost product) automatically lends itself to consumer price shopping regardless of consumer's perceptions of the manufacturers' RPI or the consumer's relative involvement level toward that firm. The statistical mediation of involvement between consumer perceptions of firm RPI and propensity to pay price premiums is not supported in a lower cost clothing category either. However, the impact of involvement on the propensity to pay premiums is positive and statistically significant in the clothing setting. The dissertation results may indicate that consumer perceptions of RPI apparently do not influence consumer price elasticity.

Company Constituency-related Findings

In total, four of the six hypotheses forwarded for the company constituency are supported by the individual level data while five of the six hypotheses are supported by the aggregated firm level data. The data indicates that a corporate culture of innovation, defined as a multidimensional construct that leads to employees' shared values and beliefs, positively impacts employee perceptions of a firm's RPI. The data support the view proposed in this dissertation that a culture of innovation acts as a precursor by conveying a corporate philosophy, legitimizing various corporate activities and facilitating employee socialization.

An employer-perceived reputation for product innovation leads to employee excitement toward typical work tasks. Said differently, employees who perceive their firm to have a relatively innovative work environment (i.e., a high employee-perceived RPI) approach their work tasks with greater excitement than employees who perceive a relatively less innovative workplace. Research indicates that employee attitudes and moods are among the most important dimensions of a work

experience and that employees are attracted to and remain employed by firms that exhibit values congruent with their own. Thus, employees that are attracted to firms that they perceive as signaling a relatively high-RPI find their typical work tasks to be challenging and exciting.

The hypothesis that the greater the employee perception of a firm's RPI, the greater the employee perception of increased workload is not supported by the individual data (see Table 6.8) yet finds relatively strong support in the corporate level data (see Table 6.9). These results may indicate that individual perceptions of firm workload levels may vary across employees but that, from an organizational perspective, the greater the employee perception of a firm's RPI, the greater the perceived workload relative to employees at lower-RPI firms. The difference in results on an individual versus a firm level may also reflect differences in perceptions across department functions. Given the results for this hypothesis, further research examination is warranted before commenting on the relationship with any empirical certainty.

The findings also support the hypothesis that the greater the employee perception of a firm's RPI, the greater their perception of heightened job performance requirements relative to peers at competitive firms. Thus, employees at high employee-perceived RPI companies perceive the performance expectations of their senior managers as greater than that for peers at other companies within the industry. Research indicates that performance expectations are dyadic in that both the employees and their supervisors drive the expectations. While the source of the heightened expectations (i.e., employee or supervisor or both) is not broached in this study, the impression that expectations are higher at relatively more innovative firms is supported. Thus, there are human resource implications to this finding in that senior managers at firms that are perceived as having strong and positive reputations for product innovation should be cognizant of the relative performance expectations perceptions of employees.

Among the strongest relative relationship in the company constituency data is the impact of internally-perceived RPI on employee organizational commitment (see Tables 6.8 and 6.9). In fact, RPI accounts for nearly 60% of the bivariate variance in organizational commitment in the firm level analysis. An implication of this finding is that employee-perceived RPI may act as a firm level factor in employee motivation and retention. The proposed positive relationship between employee perceptions of a firm's RPI and job-related stress levels is not supported. Results of both the individual and firm level analyses indicate that stress is not an outcome of an employee-perceived corporate reputation for product innovation and may indicate that stress is more a function of individual inducement than it is a result of a perceived high firm RPI.

CONTRIBUTIONS AND IMPLICATIONS

On a general level, this dissertation is grounded on the resource-based view of the firm (Barney 1991) and recognizes that firms compete for competitive advantage via their tangible (e.g., products, equipment) and intangible (e.g., reputation, employee skills) resources. The majority of innovation literature centers on the tangible impact that new product development initiatives have on the financial outcomes (e.g., sales, market share) of innovation. Yet, research investigation of the less tangible facets of innovation, such as the non-financial outcomes of a reputation for product innovation (RPI) remain relatively uninvestigated despite their promise as a source of non-imitable sustainable competitive advantage. This dissertation contributes to the literature by updating the explosive growth in financial outcomes research and by developing and testing a conceptual framework that investigates the non-financial outcomes of a perceived RPI.

General Contributions

Theoretical Contributions. This dissertation research contributes to the literature in numerous ways. First, the principles of signaling theory and institutional theory are applied to an innovation context. Signaling theory is used in the marketing literature to investigate how firms can use signals such as price, brand name, product features or warranties to influence consumer perceptions (Nelson 1970, 1974; Dawar and Parker 1994; Olson 1977; Rao and Monroe 1989; Robertson et al. 1995). In this research, an initial investigation of potential outcomes of being perceived as a new product innovator is undertaken to assess if there is strategic value in signaling a reputation for product innovation to firm constituencies. Insight from institutional theory suggests that as firms reinvest in the signal, patterns of behavior among constituents of the firm are likely to emerge and potentially provide firms with some measure of sustainable competitive advantage.

A further contribution lies in applying the principles of signaling theory in an innovative reputation context. While signals of a retailer's reputation have been investigated (Dawar and Parker 1994; Rao and Monroe 1989), results indicate that a retailer's reputation has relatively low impact on consumer's perceptions. This may be explained, in part, by the fact that retailers sell a broad range of products and thus have a diluted or less *specific* reputation for individuals to engage (Dawar and Parker 1994). This research investigates the potential impacts that a firm's reputation for product innovation may have across five constituencies of the firm. A further contribution to the literature is the development of a RPI scale, which measures constituent perceptions of a firm's reputation for product innovation. Developing a scale for this action-specific facet of firm reputation allows future researchers to assess other impacts that a firm's RPI may have and may serve as a guide in any subsequent innovation scale development efforts.

Managerial Contributions. This research broadly contributes to marketing practice on two levels. The financial outcomes section of the dissertation provides managers with a single reference point from which to assess the relative performance impact of 24 drivers of NPD. This knowledge can assist managers in designing NPD initiatives with greater efficiency and effectiveness. This section of the dissertation is primarily concerned with the tangible aspects of innovation. The non-financial outcomes section of this research contributes to practice by introducing the potential impact that promoting a reputation for product innovation has on several constituencies of the firm. By incorporating constituency variables into their strategic decision-making framework, managers can develop strategies that simultaneously address multiple business fronts and therefore enhance the probability of sustainable competitive advantage. In addition to focusing on the financial outcomes associated with NPD initiatives, managers should take a multifaceted view of innovation and analyze how the initiatives of the firm impact their various constituencies. Firms may realize potential benefits that are not reflected in the financial figures. Specific contributions and implications for both the financial and non-financial outcomes sections of the dissertation are presented next.

Financial Outcomes: Specific Contributions and Implications

The goals of any meta-analysis are to provide substantive information about the net effects that characterize a body of research, provide insights into methodological issues and offer suggestions for future research based upon what is known and what remains to be learned (Assmus, Farley, and Lehmann 1984). Thus, a meta-analysis provides a rigorous alternative to a casual, narrative discussion of a rapidly expanding research literature (Wolf 1986). Insights into the variety of evidence and the multitude of reported factors are presented here in the quest to identify the key drivers of new product performance and to present them in terms of their relative

strength. The meta-analytic investigation of financial outcomes is motivated by the fact that product innovation is a leading prescription in organizational quests for competitive advantage. This dissertation documents the magnitude of the relationships that can be expected, on average, and the conditions under which relatively larger versus smaller performance effects can be expected. A contribution of this analysis is that it synthesizes the innovation literature and incorporates the relative explosive growth in the field over the past several years.

The findings simultaneously cast doubt over the performance impact of certain predictors and raise new questions for managers and researchers alike. The lack of support for the hypothesis that cross-functional integration is positively associated with market performance is one example. It is a common perception among scholars and managers that cross-functional integration in a NPD initiative improves a product's overall chances of marketplace success. Cross-functional integration, and its by-product of multiple perspectives, is widely believed to lead to a stronger development effort and a more successful product performance. While a bivariate analysis supports the hypothesis, multivariate analyses indicate that cross-functional integration may not be the panacea it is sometimes prescribed to be. There may me multiple reasons why the negative or null effects are exhibited in the data.

For one, the seemingly contrarian finding may be a statistical artifact. The range of scale reliability levels (i.e., Cronbach's alpha) reported for cross-functional integration scales (.56 to .95) may play a role in that the actual construct of interest is not being accurately measured. Researcher effort directed at improved scales may lead to more precise measurement and improved interpretation. Further, a variance in construct definition and/or operationalization across studies may be a factor leading to the noted results. For example, integration has been alternatively operationalized as the relational climate between functions (e.g., Moenaert et al.

1994), the mere use of multiple functions in the NPD process (e.g., Ittner and Larcker 1997) and the degree of coordination between functions (e.g., Song et al. 1997). Such differences in operationalization may complicate researcher efforts to determine empirical generalities and to recommend a managerial course of action regarding cross-functional integration. It may be, however, that integration is simply not a substantive predictor of new product performance. Smith et al. (1991) propose that structural complexity (i.e., cross-functional integration) can lead to information distortion – purposefully or not – and ultimately to sub-optimal information upon which to base a decision. In sum, these findings require more detailed academic investigation before accurate strategic prescriptions are made.

The dissertation results indicate that a relatively few variables can substantially drive market performance. One contribution of this research is that the results provide a roadmap for future research and indicate which variables can provide scholars with the greatest potential for insight. Explicating a more parsimonious set of determinants of market performance allows researchers to better understand the underlying dynamics of why some products succeed and others fail. Further, continued investigation of still more (i.e., more than the current 24) determinants may be less fruitful than a concerted effort to explicate the intricacies of those factors that account for a large portion of the variance in financial outcomes.

The results further indicate which determinants of market performance have a relatively larger or smaller impact on performance. This knowledge allows researchers and managers to focus on those factors that offer the greatest potential for marketplace success and to avoid those that may have relatively little impact or that have low contribution to cost ratios. Practitioners, armed with the knowledge of which drivers of marketplace performance are most important relative to their unique competitive situation can develop more efficient and effective marketing

strategies. Given the performance pressures and time constraints facing modern business managers, the findings from this meta-analysis provide a strategic tool to narrow their focus and streamline their efforts. For example, focusing on developing a product that is perceived by consumers as having a relative competitive advantage, capitalizing on existing firm synergies and carefully selecting which markets to enter are three important variables for managers to consider.

Another contribution of the meta-analysis for researchers is that the results further point out areas in the innovation literature where academic focus is both concentrated and sparse. Highlighting areas with relatively meager investigation initiatives, such as the impact of meeting customer needs or dedicating firm resources to a NPD initiative, provides researchers with a guide to underdeveloped avenues of research focus. Conversely, this research points out areas where research initiatives are plentiful, such as the effect of product advantage or marketing synergy on performance, and accurately details the expected levels of association. This information allows researchers to focus attention on avenues of research that are most likely to have an incremental impact on marketing practice.

Finally, the innovation literature has developed to a point where a sufficient base of empirical knowledge is amassed such that future investigations of the determinants of new product performance need no longer compare resulting effect sizes to the *zero* (i.e., r = .00) null effect. Where the mean effect size is shown to be statistically distinct from zero, tests of a null hypothesis of zero in future research are not appropriate (Farley, Lehmann, and Sawyer 1995). Thus, the central tendency of association for the majority of the 24 predictors is now sufficiently established for future research initiatives. For example, the empirical evidence in this dissertation regarding the relationship between marketing synergy and market performance indicates that any future tests of significance for marketing synergy should use a correlation of approximately .28 for tests of

statistical significance. This effect size is merely an approximation of the effect size of the determinant across all models used in the dissertation. Therefore, another contribution of this meta-analysis is that it serves as a reference for current empirical knowledge on the central tendency and variance associated with several predictors of market performance. It further serves as a foundation for structuring thought and guiding future research on new product performance.

Non-Financial Outcomes: Specific Contributions and Implications

The investigation of the non-financial outcomes of a corporate reputation for product innovation is motivated by a desire to broaden the horizon for innovation research and to introduce new strategic decision variables to managers. It addresses academic acknowledgements of gaps in our knowledge of the impact of reputation on key constituencies of the firm and is a step toward a better understanding of the differing perceptions that individuals have toward firms and the products they produce.

The research implications arising from the non-financial outcomes study are fairly broad. A new level of abstraction for investigating innovation and new product development is introduced with the multifaceted model. Rather than solely examining the direct-effect relationships between innovation antecedents and financial outcomes, a broader model focused on the effects on five firm constituencies is presented and offers multiple avenues for investigation and model verification. On one level, this research contributes to the innovation literature by expanding areas of research potential and answering standing calls to critically rethink how researchers approach the study of innovation (e.g., Montoya-Weiss and Calantone 1994; Wind and Mahajan 1997). The proposed models and empirical findings of this dissertation introduce a broader perspective for approaching innovation research issues.

It subsequently responds to the noted dearth in the literature regarding the impact of reputation on key corporate constituencies by investigating the impact of a reputation for product innovation on consumers and employees. The perceptions of employees are crucial to the development and introduction of new products while the perceptions of consumers are critical to the ultimate performance of the product. Thus, both of these firm constituents are crucial components in the NPD mix. Both constituencies are "overlooked" in extant reputation literature (Fombrun and Shanley 1990) and this study attempts to partially close this gap in the literature.

Along these lines, this dissertation introduces the reputation for product innovation (RPI) construct to the literature. A general model of the impact of a perceived RPI (see Figure 2.1) is developed using principles from signaling and institutional theories and associated empirical literature as a foundation. This knowledge is complemented with insights from qualitative managerial interviews. The RPI construct is defined as perceptual and constituency-specific RPI scales are developed to measure both consumer and employee perceptions of RPI. The robustness of the scale is confirmed across multiple constituencies and product categories and contributes to the field by providing researchers with a tool for assessing future research questions. The development of constituency-perceived RPI, an action-specific facet of a firm's overall reputation, further contributes to the literature by addressing a noted confound between general and action-specific corporate reputations (e.g., Fryxell and Wang 1994; Rowe et al.1998) and empirically distinguishing the RPI measure from other measures of reputation. Thus, development of the RPI scale is a first step in measuring distinct facets of corporate reputation not confounded by a measure of the firm's general reputation.

This research also contributes by building on the existing research proposition that individuals evaluate firms not only by the products or services that they produce but also by the

perceptions that those individuals have for firms (e.g., Brown and Dacin 1997; Wansink 1989). This study extends investigation of the impact that corporate cues (e.g., reputation) have on consumers by introducing RPI as an additional consumer evaluated cue. The introduction of the impact of such cues on employees further extends this line of inquiry by demonstrating that the perceptions of firm constituencies other than consumers impact their attitudes and behaviors toward the firm. In essence, a firm must be cognizant of its perception among its various constituencies and vigilant in reinvesting in a positive perception. The dissertation findings provide additional empirical support for existing research that suggests that firm signals impact internal employee attitudes and actions (e.g., Gilly and Wolfinbarger 1998).

The lack of support for the hypothesis that consumer price sensitivity is reduced for products from firms with a relatively high consumer-perceived RPI (H_3) is at variance with the theoretical views that a favorable corporate reputation leads to consumer willingness to pay price premiums. While further investigation is necessary before any findings can be viewed as empirical generalizations, improved scale development may be called for given the *post hoc* finding that some subjects in the survey interpreted the scale items differently than the items were intended. For example, a consumer with a high level of involvement toward Ford is hypothesized to not seek out less expensive dealers. This proposed lack of 'shopping around' or a willingness to pay a price premium would be reflected by a positive relationship between involvement and propensity to pay a premium. Thus, the existing scale may not be an appropriate measure of the hypothesized effect.

Another contribution of this study is that the findings indicate that a corporate reputation may act as a human resource tool in the retention of employees. It is reasonable to assume that certain individuals want to be employed by a firm they perceive as having a high RPI and that this reputation has some intangible value. This assumption finds support in this study. Firm dynamics,

such as an internally (i.e., employee) perceived reputation for product innovation, can play an important role in shaping certain employee attitudes and subsequent behaviors (e.g., organizational commitment). Previous research indicates that individuals are attracted to organizations that they perceive to have values similar to their own (e.g., O'Reilly et al. 1991; Schneider 1987). The findings presented here build on extant research and indicate that a firm's perceived RPI may attract innovation-prone individuals and positively impact employee retention rates by shaping individual attitudes.

The notion of evaluating new product initiatives on marketplace performance metrics alone is pervasive in business practice. It is likely that in the fast-paced environment of daily competitive activities, the more easily accessed tangible effects of innovation initiatives are used to evaluate the success/failure of an initiative while more intangible effects are somewhat overlooked. The value of this research to managers is the introduction of the intangible outcomes arising from constituent perceptions of a reputation for product innovation. The insight for managers is that the impact of innovation should be evaluated from a rather broad perspective. Having a high reputation for product innovation can translate into a sustained competitive advantage as some competitors may exit contested segments, potential competitors may avoid entry into certain segments and others may strike an increasingly reactive strategic posture. These are effects that are not adequately reflected in estimates of financial outcomes (e.g., sales figures, market share)

Findings from this study indicate that consumers may develop more favorable attitudes toward firms that they perceive as innovative and are more tolerant of occasional product failure. Given the lifetime value of a loyal customer, having an innovative reputation may have positive long-term financial consequences. Insight into the benefits of developing closer relationships with suppliers, such as co-innovation opportunities, may provide incentive to some managers to modify

existing channel relationships. Thus, an implication from the dissertation findings is that managers should be cognizant of the intangible consequences (e.g., favorable attitude, heightened loyalty) of having a perceived high RPI and incorporate this understanding into future strategic decisions.

In sum, the proposed value of this dissertation to managers and researchers resides in the knowledge that to interpret the effects of innovation and new product development solely by market performance metrics is myopic. The introduction of a constituency approach to managing innovation and new product development initiatives has the potential to assist managers in more accurately framing their individual NPD strategic options and decision criteria. Likewise, researchers are directed to new avenues of inquiry that have the potential to more fully explicate the impacts of firm innovation.

LIMITATIONS

Possible limitations of the dissertation findings should be noted. Those limitations applicable to both financial and non-financial sections of the study are detailed below. This discussion is followed by a discourse on future research directions.

Financial Outcomes

In addition to the limitations of relying on bivariate data to draw certain conclusions and the relative lack of multivariate data in the innovation literature noted in the previous section, there are other limitations to the financial outcomes analysis of the dissertation. For example, a quantitative synthesis of data across a literature stream is constrained by the nature and scope of the original studies on which it is based. Not all of the studies in the literature report correlations (i.e., the metric used in this study) and not all the authors could provide correlational data. As a result, some studies could not be incorporated into the meta-analysis and, while the essence of the

extant evidence is captured, it is not captured in total. Further, the cross-sectional nature of the original studies limits one's ability to make confident causal inferences. While time-series data would be most desirable for these purposes, they are unavailable in the original studies, and thus, a reliance on cross-sectional data for making causal inferences naturally exists in the product innovation literature. Also, the relationships reported in the original studies could be positively biased due to an over-sampling of results from successful firms. In other words, firms that unsuccessfully innovate have likely exited the market and therefore may be underrepresented in the included studies.

Non-Financial Outcomes

The Multifaceted Impact Model of a Reputation for Product Innovation is an exploratory model. Given the lack of a single theory directly in this specific area, an attempt was made to cover a wide range of literature related to the dissertation research questions. Principles from signaling (Spence 1973) and institutional (Selznick 1957) theories are combined with associated empirical literature to develop the model. Any inherent deficiencies in this generative approach are germane to an interpretation of the model and its results. While the empirical results in the dissertation are relatively strong and statistically significant, the reported findings are based on a relatively small number of subjects. Further, company constituency subjects are sourced from only four SIC groupings. Results from the non-financial outcomes section of the dissertation should be interpreted with these facts in mind.

FUTURE RESEARCH DIRECTIONS

While the Multifaceted Impact Model of a RPI advances hypotheses for five firm constituencies, only the consumer and company constituencies are empirically evaluated within the

dissertation. Thus the hypotheses for the remaining three constituencies provide an opportunity for future research inquiry. Further, the impact of a firm's perceived RPI on additional constituencies (e.g., governmental regulators) remains open to investigation. While formal research propositions are forwarded in the dissertation, additional research avenues may present themselves. Deeper investigation into one or more of the constituency group effects is one possible avenue of approach for the interested researcher.

Further inquiry of the consumer or company constituency effects is encouraged. For example, the development of another measure of consumer propensity to pay price premiums may provide insight into the lack of significant results found in this study. A more precise understanding of this proposed relationship holds significance for marketing managers responsible for the introduction of new products. The non-significance of the relationship between employee perceptions of RPI and job-related stress levels introduces other research questions as to the effect, if any, that innovation and reputation have on employee stress. The results in this study may indicate a distinction between job-related *tension* and job-related *stress* that could benefit from scholarly investigation. The results of such a distinction carry potentially valuable human resource implications.

Likewise, an explication of the interrelationships among constituencies would be worthwhile. For example, a better understanding of how employee interaction with consumers affects consumer perceptions of a firm's reputation is beneficial to many organizations. A positive relationship between the two would indicate a need for firms to train front line employees on how to effectively interact with consumers in order to maximize consumer perception of a firm's RPI. Research into the impact that co-innovation or partnerships between a firm and its supplier has on consumer perceptions would likewise yield valuable practical insights. Given the degree of

commitment associated with such arrangements, a better understanding of this hypothesized outcome would help managers to assess the cost-benefit relationship of pursuing such partnerships.

Given the rising importance of the capital market in modern strategic business decisions, the interaction effects between financial analysts of other firm constituencies (e.g., suppliers, consumers) and their subsequent impact on market valuation would prove valuable. There are also obvious benefits that emerge from the study of innovation in the relatively unexplored channels or financial market contexts. For instance, uncovering the relationship between the degree of firm-analyst interaction and subsequent stock opinions could guide senior managers as to the appropriate degree of interaction with market analysts. A research investigation of the impact that a supplier-firm partnership, or joint venture, has upon both analyst opinion and market capitalization would provide key insight into the overall value of partnering (from a capital market perspective) and the importance of choosing a partner with an appropriately perceived reputation. An investigation of the (in)compatibility of perceived reputations between firm partners and its impact on certain constituencies might also prove insightful and assist in the selection of channel partners.

A deeper understanding of how RPI impacts attitude formation, product expectations and emotional responses would prove beneficial to both consumer behavior and consumer satisfaction researchers alike. By understanding the impact that a reputation may have, managers could then begin to investigate how to signal an appropriate reputation in order to achieve a desired constituency response. Likewise, a deeper investigation of innovation effects can be applied to other research areas such as organizational behavior, organizational learning, competitive advantage and market orientation just as knowledge from other areas and disciplines can augment

our knowledge of innovation. Empirical findings and theoretical hypotheses illustrate that innovation research has applications to several discipline's literature streams. For instance, innovation antecedents and outcomes impact the literature on consumer behavior, organizational behavior, financial management, operational strategy and human resource management to name a few. The findings in this dissertation point to the impact that a perceived reputation for product innovation can have in employee attraction and retention as well as its role is attitude formation, among other effects. Thus, innovation research has the potential to augment academic knowledge across an array of disciplines because the effects of innovation initiatives impacts not only consumers, but employees, senior managers, financial analysts, competitors, etc. Likewise, existing knowledge from a diverse group of literature streams (e.g., accounting, finance, marketing, management) can augment innovation research initiatives and provide NPD researchers with new insights into the impacts of new product development.

In closing, this dissertation study was designed to be an instrument to expand and improve the innovation literature. Taking a resource-based perspective of the firm (Barney 1991) this research was focused on gaining a better understanding of how firms might use their tangible and intangible resources in the quest for competitive advantage. Topics for investigation were chosen because they had the potential to build upon existing knowledge and to serve as a bridge to develop new knowledge. An additional goal was to positively impact the decision making process for managers faced with innovation situations. The desire was to provide information to managers that both simplified certain decision criteria while introducing other pertinent, perhaps overlooked, decision variables.

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APPENDIX A

DOCUMENTATION REGARDING QUALITATIVE EXECUTIVE INTERVIEWS

Background Information

While the executive interviews conducted in this dissertation produced numerous insights, the dissertation focus is on those insights that are relevant to the literature, resonate across multiple managers or that have the greatest potential for stimulating future academic research (cf. Kohli and Jaworski 1990; Zaltman, LeMasters and Heffring 1982). Using the literature as a guide, a series of questions was developed for the in-depth interviews with managers (see below). An initially extensive list of questions was systematically reduced to a focused list of essential questions as prescribed by Patton (1990), among others. Managers from twenty firms were interviewed for this study, which is in line with conventional wisdom as an appropriate number of subjects for providing confidence in any qualitative generalizations (Miles and Huberman 1994). A "purposeful" sampling strategy (Patton 1990, pp. 169-83) was employed whereby managers from firms that are generally understood to be the leaders in product innovation and/or marketplace performance within their respective industries were selected for the interviews.

The executives interviewed are all senior level managers representing a variety of firms and industries including computer software, industrial manufacturing, consumer products, computer hardware, publishing, transportation, foodservice and apparel manufacturing among others. The majority are either vice-presidents or presidents of their organizations with an average career spanning 24.6 years.

All firms interviewed in the course of this investigation are among the top three competitors (a self-rating) in their industry on a number of measures with the majority occupying the number one or two positions. Each manager interviewed is either directly involved with or oversees new product initiatives within their firm. If the original senior executive contacted deemed himself to not be directly involved with innovative initiatives, we were referred to the next most senior manager having a high degree of involvement. On a seven point scale where the managers self-rate their degree of involvement with new product development activities at their respective firms, the mean level of involvement is 6.22 (σ =0.80) with 7 being "highly involved." Additionally, the ratio of new products introduced by their firms in the past two years compared to their respective competitors is 1.2:1. The names of the firms are withheld by request as a condition for accepting the invitation to be interviewed. All interviews lasted approximately 45 minutes, were recorded (with permission) and were subsequently transcribed and coded for interpretation.

Interview Questions

Assume that a company has a strong reputation for product innovation:

1. How do consumers and competitors react differently to this company?
2. What are the different effects of this reputation on employees; on suppliers; on market analysts?
3. In what ways would this company differ from a company that does not have a strong reputation for product innovation (e.g., culture, employees, strategies, activities, structure, etc.)?
4. When are these reputational effects on customers, competitors, employees, suppliers, and market analysts even stronger?
5. When are these reputational effects likely to manifest in superior marketplace performance for the company?

APPENDIX B

INITIAL SCALE DEVELOPMENT ITEMS FOR THE REPUTATION FOR PRODUCT INNOVATION (RPI) SCALE

	Strongly Disagree						Strongly Agree
[Company Name] has a track record of successful new products.	1	2	3	4	5	6	7
[Company Name] rarely improves its existing product lines.	1	2	3	4	5	6	7
[Company Name] is known for its automotive ingenuity.	1	2	3	4	5	6	7
[Company Name] makes financial investments in innovative initiatives.	1	2	3	4	5	6	7
[Company Name] is a cutting-edge automobile production company.	1	2	3	4	5	6	7
[Company Name] is a new product leader in its industry.	1	2	3	4	5	6	7
When I think of innovative automobiles, I think of [Company Name].	1	2	3	4	5	6	7
[Company Name] is probably not receptive to new product ideas.	1	2	3	4	5	6	7
[Company Name] has a favorable overall corporate reputation.	1	2	3	4	5	6	7
[Company Name] is a new product pioneer in its industry.	1	2	3	4	5	6	7
[Company Name] seldom takes chances by introducing radical automobiles.	1	2	3	4	5	6	7
[Company Name] is an innovative company when it comes to automobiles.	1	2	3	4	5	6	7
[Company Name] often takes risks with new automobile introductions.	1	2	3	4	5	6	7
[Company Name] rarely introduces truly new automobiles.	1	2	3	4	5	6	7
Constant change is probably a fact of life for [Company Name] product managers.	1	2	3	4	5	6	7
[Company Name] regularly delivers fresh, new ideas to consumers.	1	2	3	4	5	6	7
[Company Name] is a progressive company when it comes to automobiles.	1	2	3	4	5	6	7
With regard to automobiles, [Company Name] is a creative company.	1	2	3	4	5	6	7
I expect [Company Name] to introduce innovative automobiles in the future.	1	2	3	4	5	6	7
[Company Name] automobiles rarely satisfy their customers' needs.	1	2	3	4	5	6	7

APPENDIX C

CONSUMER CONSTITUENCY SCALES

Excitement Toward Firm (alpha = .97).

Instructions: The purpose of this section is to measure your feelings toward the company that was just described. To take this measure, you need to judge this company against a series of descriptive scales according to how YOU perceive the company. For each word, please circle the number that most closely represents the way that you feel about the company.

anchors → strongly disagree ..... strongly agree

When I think about [company name], I feel:

1. enthusiastic
2. interested
3. excited
4. inspired
5. motivated

Firm Image (alpha = .96).

Instructions: The purpose of this section is to measure your perception of the product image of the company that was just described. To take this measure, you need to judge this company's products against a series of descriptive scales according to how YOU perceive the company. For each pair, please circle the number that most closely represents the way that you feel about the company's image with regard to the products that it produces.

Rate your perception of the image of [company name]:

1.	Not an industry leader	.....	Industry leader
2.	Not at all popular	.....	Very popular
3.	Not widely accepted	.....	Widely accepted
4.	Few Like it	.....	Many like it
5.	Weak image	.....	Strong image

Propensity to Pay Price Premiums (alpha = .78).

Instructions: The purpose of this section is to measure your thoughts about the company that was just described. To take this measure, you need to judge this company against a series of descriptive statements according to how YOU perceive the company. For each statement, please circle the number that most closely represents the way that you feel about the company.

anchors → strongly disagree ..... strongly agree

If I were to consider purchasing an automobile from [company name]:

1. I would shop at more than one dealership to seek out low *[company name]* prices *
2. The money saved by finding a lower price would definitely be worth the time and effort spent shopping around. *
3. I would not shop around at multiple places to find low prices.

Consumer Loyalty (alpha = .78).

Instructions: The purpose of this section is to measure the strength of your feelings toward the company that was just described. To take this measure, you need to judge this company against a series of descriptive statements according to how YOU perceive the company. For each statement, please circle the number that most closely represents the way that you feel about the company.

anchors → strongly disagree ..... strongly agree

Regarding [company name]:

1. If I bought a car from *[company name]*, I would not switch and buy a different make on my next auto purchase.
2. I would get tired of driving a car from *[company name]*over a long period of time. *
3. If I bought cars fairly often, I would probably purchase other makes of autos instead of mostly ones from *[company name]*. *
4. I consider myself to be loyal to *[company name]*.
5. I would prefer to purchase another make of car rather than wait for my model of choice from *[company name]*. *

Tolerance For Failure (alpha = .81).

Instructions: The purpose of this section is to measure your attitude toward minor problems from the company that was just described. To take this measure, you need to judge this company against a series of descriptive statements according to how YOU perceive the company. For each statement, please circle the number that most closely represents the way that you feel about the company.

anchors → strongly disagree ..... strongly agree

Assume that you have decided to purchase an automobile from [company name]:

1. Even if a friend experienced a minor product defect with a car from [company name], I would still consider buying a *[company name]*.
2. Any minor defect with a car from *[company name]* would be totally unacceptable to me. *
3. I would trust [company name] to fix minor problems with the car.
4. A minor defect with the car would cause me anxiety. *
5. Finding out about a minor defect with cars from [company name] would cause me to never buy a [company name]. *
6. I would be tolerant of minor product defects with a car from [company name].
7. I expect all cars (including those from [company name]) to have some minor defects but would purchase a car from [company name]anyway.

Involvement (alpha = .92).

Instructions. The purpose of this section is to measure your interest in the automobile company that was just described. To take this measure, you need to judge this company against a series of descriptive scales according to how YOU perceive the company. For each pair, please circle the number that most closely represents the way that you feel about the company.

To me, [company name] is:

1. Important	.....	Unimportant
2. Boring	.....	Interesting
3. Relevant	.....	Irrelevant
4. Exciting	.....	Unexciting

5. Means nothing	.....	Means a lot to me
6. Appealing	.....	Unappealing
7. Fascinating	.....	Mundane
8. Worthless	.....	Valuable
9. Involving	.....	Uninvolving
10. Unfamiliar	.....	Familiar

Reputation for Product Innovation (RPI) (alpha = .97).

Instructions: The purpose of this section is to measure your perception of the innovativeness of the products of the company that was just described. To take this measure, you need to judge this company's products against a series of descriptive statements according to how YOU perceive the company. For each statement, please circle the number that most closely represents the way that you feel about the company.

anchors → strongly disagree ..... strongly agree

1. *[company name]* has a track record of successful new automobiles.
2. *[company name]* is a cutting-edge automobile company.
3. *[company name]* is a new product leader in its industry.
4. *[company name]* is an innovative company when it comes to automobiles.
5. [company name] is a progressive company when it comes to automobiles.
6. With regard to automobiles, [company name] is a creative company.
7. I expect [company name] to introduce innovative autos in the future.

NOTE: An asterisk (*) indicates that the item is reverse scaled.

APPENDIX D

COMPANY CONSTITUENCY SCALES

Workload (alpha = .83).

Instructions: The purpose of this section is to measure your perception of your typical workload. For each statement, please circle the number that most closely represents the way that you perceive your workload.

anchors → strongly disagree ..... strongly agree

Please rate your level of agreement with the following statements.

When I think about my typical workload, I think that:

1. I have to do things that I don't really have the time and energy for.
2. There are few work-related demands on my time. *
3. I need more hours in the day to do all of the things that are expected of me.
4. I can't ever seem to get caught up.
5. I can easily meet everyone's workload expectations. *
6. There are plenty of hours in the day to accomplish my work tasks. *
7. I seem to have to overextend myself in order to be able to finish all of my work tasks.
8. I have to do things hastily and maybe less carefully in order to get everything done.

Job Performance Expectations (alpha = .70).

Instructions: The purpose of this section is to measure your perception of how senior managers set job expectations at your company. For each statement, please circle the number that most closely represents the way that you think your senior managers set job performance expectations.

anchors → strongly disagree ..... strongly agree

Please rate your level of agreement with the following statements.

With regard to job performance expectations at my company:

1. Job performance expectations at my company seem to increase on a regular basis.
2. Compared to similar managers at other companies, my senior managers seem to have much lower job performance expectations for our employees. *
3. My senior managers make it clear that superior performance is the only acceptable performance.
4. Senior managers at my company set higher performance goals than do managers at our primary competitor(s).
5. My friends at other companies seem to have job performance expectations much higher than mine. *
6. Job performance expectations at my company seem higher than one would expect, on average.

Job-Related Stress (alpha = .87).

Instructions: The purpose of this section is to measure your thoughts regarding working at your company. For each statement, please circle the number that most closely represents your thoughts about how your work environment impacts you.

anchors → strongly disagree ..... strongly agree

Please rate your level of agreement with the following statements.

Thinking about my work environment:

1. I feel fidgety or nervous because of my job.
2. Problems associated with work have kept me awake at night.
3. My job tends to negatively affect my health.
4. If I had a different job, my health would probably improve.
5. I feel nervous before attending meetings at work.
6. When I am at work, I feel calm. *
7. At the end of a workday, I do not feel anxious. *

Organizational Commitment (alpha = .84).

Instructions: The purpose of this section is to measure your views regarding working at your company. For each statement, please circle the number that most closely represents your views about working at your company.

anchors → strongly disagree ..... strongly agree

Please rate your level of agreement with the following statements.

Thinking about my relationship with my company:

1. I feel very little loyalty to my company. *
2. I find that my personal values and my company's values are very similar.
3. I am proud to tell others that I am part of this organization.
4. It would take a lot of change in my present work conditions to cause me to leave my company.
5. For me, this is the best of all possible companies to work for.
6. Deciding to work for my company was definitely a mistake. *

Corporate Culture of Innovation (alpha = .71).

Instructions: The purpose of this section is to measure your views regarding the corporate culture at your company. For each statement, please circle the number that most closely represents your assessment of the corporate culture at your company.

anchors → strongly disagree ..... strongly agree

Please rate your level of agreement with the following statements.

Thinking about my company's corporate culture:

1. My company has a long-term horizon when it comes to strategic planning initiatives.
2. My senior managers always set realistic strategic goals.
3. Senior managers at my company are committed to innovative initiatives.
4. In general, my company values short-term successes more than long-term successes. *

5. If I were associated with a job-related project that failed, I would be concerned about my future with this company. *
6. Everyone at my company knows that we must continually develop new products in order to be an effective competitor.

Excitement Toward Work Tasks (alpha = .91).

Instructions: The purpose of this section is to measure your thoughts toward your typical, everyday work tasks (i.e., your job requirements). For each word, please circle the number that most closely represents the way that you think about your typical work tasks.

anchors → strongly disagree ..... strongly agree

Please rate your level of agreement with the following statements.

When I think about my typical work-related tasks, I am:

1. Enthusiastic
2. Interested
3. Excited
4. Inspired
5. Motivated

Reputation for Product Innovation (RPI) (alpha = .93).

Instructions: The purpose of this section is to measure your perception of the innovativeness of your company with regard to the products that are produced. For each statement, please circle the number that most closely represents the way that you perceive the product innovativeness of your company.

anchors → strongly disagree ..... strongly agree

Please rate your level of agreement with the following statements.

Thinking about my company and its history of new product introductions:

1. My company has a track record of successful new products.
2. Relative to our competition, my company is a cutting-edge company.
3. My company is a new product leader in its industry.
4. With regard to the products that we produce, my company is an innovative company.
5. My company is a progressive company when it comes to the products that we produce.
6. Relative to competition, my company is a creative company.
7. I expect my company to introduce innovative new products in the future.

NOTE: An asterisk (*) indicates that the item is reverse scaled.

APPENDIX E

FACSIMILE FORM INCLUDED WITH SURVEY MAILING

To: **David H. Henard**
Texas A&M University
➨ *FAX: 409-862-2811*
Phone: 409-845-6205

Or feel free to mail this page to: David H. Henard
Dept. of Marketing
Texas A&M University
College Station, TX 77843-4112

Thank you, once again, for your participation in this research initiative. As I mentioned in my March 5th introductory letter to you, I am more than happy to share all results from this research project with participating companies as well as to provide you with both existing and forthcoming research papers. Below, please check any topic that is of interest to you and I will respond as a further appreciation for your participation.

☐ Please send me a copy of the research findings that result from the surveys that we are currently completing.

☐ Please send me a copy of the research paper that focuses on the 24 drivers of new product development marketplace success.

☐ I would like for our company to participate in an expansion of the current survey by having employees throughout our company take the survey in an effort to better understand how our employees view their work environment. Please contact me.

☐ I would be interested in receiving copies of any future research papers regarding innovation and reputation that result from your ongoing research efforts.

☐ Other request:

_____

_____

_____

_____

Please enter your contact information below. This information will be strictly confidential.

Name: _____

Title: _____

Company: _____

Mailing Address: _____

_____

Telephone Number: _____

VITA

DAVID HAL HENARD
7331 New Forest Lane
Wake Forest, NC 27587

Current Employment

North Carolina State University, July 2000
Assistant Professor of Marketing

Education

Ph.D.	Texas A&M University, December 2000 • Major in Marketing with Minors in Management and Quantitative Methods
M.B.A.	Emory University, May 1995 • Concentration in International Marketing
B.A.	University of Tennessee, May 1982 • Major in Zoology

Business Experience

1983 – 1996	Held numerous sales, marketing and trade planning positions with the Oscar Mayer Foods and Kraft-General Foods divisions of the Philip Morris Companies.