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dissertation entitled

ENHANCING MARKETING INNOVATION THROUGH
MARKETING KNOWLEDGE TRANSFER:
AN INVESTIGATION OF STRATEGIC ALLIANCES

presented by

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has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Business Administration

Major professor

Date June 5, 2002

ENHANCING MARKETING INNOVATION THROUGH MARKETING KNOWLEDGE TRANSFER: AN INVESTIGATION OF STRATEGIC ALLIANCES

By

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A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

DEPARTMENT OF MARKETING AND SUPPLY CHAIN MANAGEMENT

2002

ABSTRACT

ENHANCING MARKETING INNOVATION THROUGH MARKETING KNOWLEDGE TRANSFER: AN INVESTIGATION OF STRATEGIC ALLIANCES

By

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This dissertation investigates the outcome of marketing knowledge that firms acquired from their alliance partners, the mechanisms that firms use to transfer the knowledge, and factors that may affect the knowledge transfer process. The dissertation consists of two distinct parts. Part 1 examines these issues from the shareholder perspective and is an event study using secondary data. Part 2 explores the same issues in more detail from the management viewpoint and is based upon the analysis of primary survey data.

The results from Part 1 suggest that announcements of marketing knowledge acquisition through alliance formations enhance shareholder value as reflected in positive abnormal returns. This incremental shareholder value is, however, affected by the type of knowledge being acquired, industry relatedness between alliance and parent firm, and national differences between partners. Respectively, the results point to the effects of knowledge tacitness, absorptive capacity and cultural differences. All of these results are reexamined in Part 2.

The results from Part 2 suggest that incremental marketing knowledge also enhances marketing innovation of the parent firms. The process of gaining marketing knowledge, however, involves external knowledge transfer from alliance partners and internal knowledge transfer back to the parent. Partner-to-partner knowledge transfer

requires coordination and cooperation between alliance partners as key learning mechanisms, whereas alliance-to-parent knowledge transfer requires rotation of marketing personnel. Results from Part 2 also suggest that trust between partners and a firm's absorptive capacity strengthen the relationships from coordination and cooperation to partner-to-partner knowledge transfer. However, absorptive capacity weakens the relationship between marketing knowledge and marketing innovation. Moderating effects of cultural differences and tacitness are not found in Part 2. These results and plausible explanations are discussed and future research directions are provided.

In loving memory of my mother

Nongsri Hanvanich

ACKNOWLEDGEMENTS

I would like to express my earnest gratitude to all my committee members who provided me guidance and encouragement throughout the course of the dissertation. I am very grateful to Dr. Cornelia Droge, my advisor, for generously giving me her time and advice, patiently teaching me how to write, and graciously supporting me through difficult times in my academic and personal life. I am greatly indebted to Dr. S. Tamer Cavusgil for his belief and confidence in me and for adopting me into the doctoral program. I am very appreciative of Dr. Roger Calantone for navigating me through the difficult data collection phase and for the methodology expertise that enabled me to complete this dissertation. I am thankful to Dr. Stewart Miller for his guidance and insight in Part 1 and for the thorough comments in other parts of the dissertation.

I also would like to thank the Center for International Business Education and Research at Michigan State University for financial assistance and to Dr. Robert Nason, the department chair, for his continuing support throughout the years. Sincere thanks to Beverly Wilkins who helped me with much needed personal help when I first arrived at the university; to Marilyn Brookes, Renee Dixon, Laurie Fitch, Patty Geller, Cheryl Lundeen, Kathy Mullins, Tiffany Norwood and Kathy Waldie for their hard work and dedication; to my friends, Rosanna Garcia, Katrina Savitski and Elif Sonmez for making the doctoral program more enjoyable; and to Tunga Kiyak and to Jeff Meese at the Electrical Engineering department, whose computer knowledge and expertise was invaluable. Finally, thanks to my loving husband, Mike, and to my extended family, especially my grandmother "Khun Kim Ang", for their love, support and belief in me.

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CHAPTER 1

INTRODUCTION

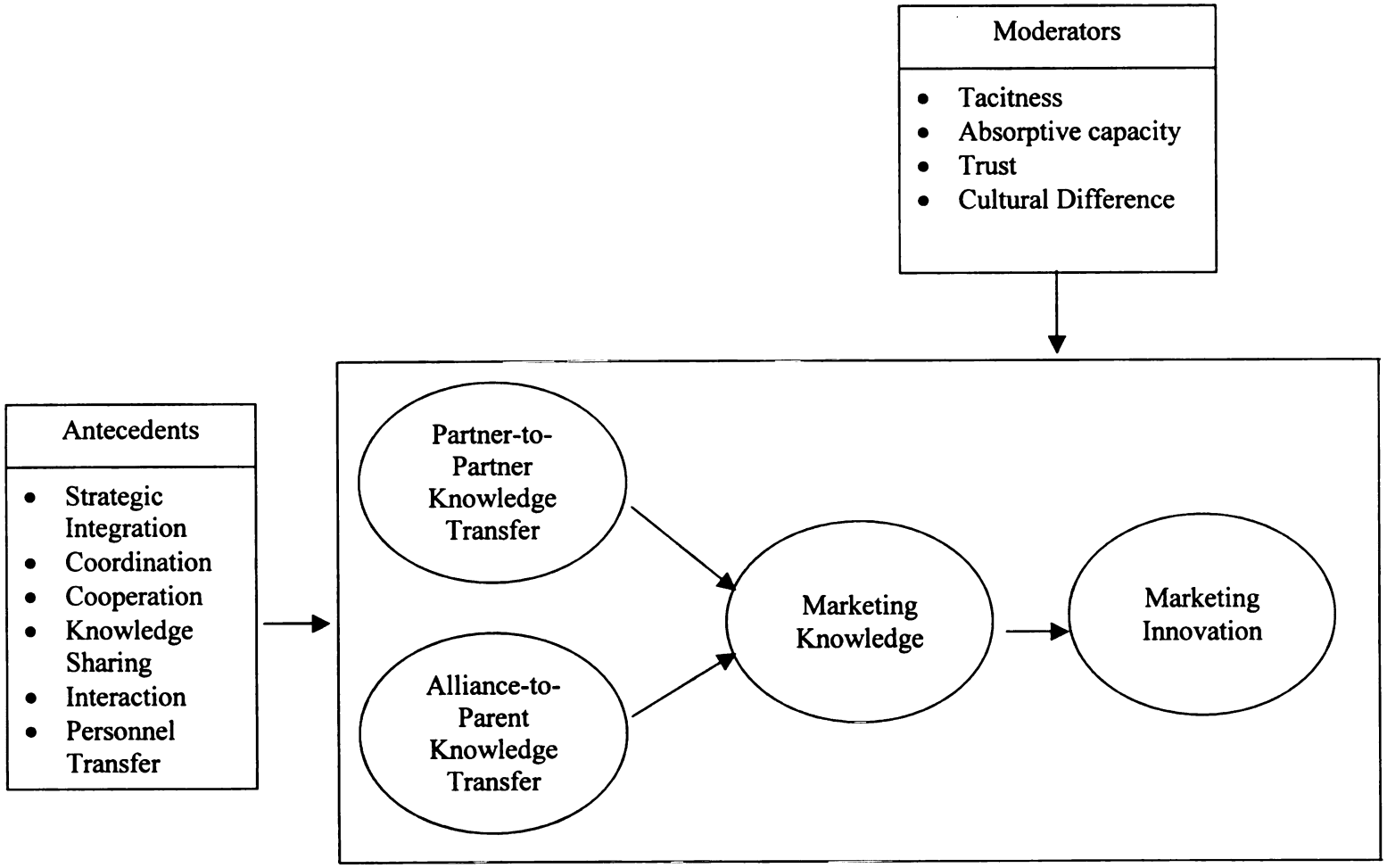
The dissertation consists of two separate parts that are related by their focus: both Part 1 and Part 2 aim to understand the process of marketing knowledge transfer in domestic and international alliances and joint ventures and how knowledge enhances innovation. Part 1 of the dissertation approaches the issue from the shareholder perspective, whereas Part 2 does so from a managerial viewpoint. Part 1, consisting of two preliminary studies using secondary data, is discussed in Chapter 2. Part 2, using interview and survey data, is discussed in Chapter 3, 4, and 5. Chapter 6 contains discussion of the dissertation results. An overview of studies in both parts is provided in Table 1.1.

The rest of this dissertation is organized as follows. Chapter 1 provides a brief background of the dissertation, the research questions and dissertation objectives, the methodological basis for answering the research objectives, and contributions of the research. The next chapter (Chapter 2) provides results of the two preliminary studies based on secondary data. These studies lead to the selection of the moderating constructs used in the subsequent survey study. Chapter 3 defines the domain of the survey study, reviews the literature and develops hypotheses based on the conceptual framework in Figure 1.1. Chapter 4 provides measurements for the constructs and the research method used in the survey. Chapter 5 discusses the analysis results related to Part 2. Discussion of dissertation results, limitations, and directions for future research are in Chapter 6.

Table 1.1: Overview of Contents in Part 1 and Part 2

Content	Dissertation Part 1	Dissertation Part 2
Key Questions	• Can knowledge acquisition in joint ventures and strategic alliances create shareholder value? • What are the key moderators of knowledge transfer process?	• Can acquired knowledge increase firm's marketing knowledge and is marketing knowledge related to marketing innovation? • What are the appropriate knowledge transfer mechanisms? • How do the moderators affect knowledge transfer mechanisms?
Key Dependent Variables/Constructs	• Shareholder Value Creation (Cumulative Abnormal Returns)	• Marketing Knowledge Transfer • Marketing Knowledge • Marketing Innovation
Methodology	Secondary Data	Primary Data
Data Source	Study I: • Dow Jones News Retrieval Study II: • Thomson Financial Security Data	• Interviews • Survey
Analysis	Event Studies	Structural Equation Model
Location in the Dissertation	Chapter 2	Chapter 3,4 and 5

Figure 1.1: Conceptual Framework



1.1 Background

It seems undeniable that knowledge and innovation are keys to wealth creation in today's business environment (Drucker 1993; Hamel 1998). In response to changes in the business environment, firms form alliances and joint ventures with other firms as a way to adjust themselves to be more responsive into a knowledge intensive society (Drucker 1993; Inkpen 1996). Increasingly, firms create global webs of business collaborations since stand-alone competition is giving way to networked rivalry (Srivastava, Shervani and Fahey 1999). As vehicles to learn (Kogut 1988), alliances and joint ventures serve as the means to acquire new marketing knowledge and innovative capability.

The notion that firms form joint ventures and alliances so as to acquire knowledge from their business partners leads to two important questions: 1) how to measure the acquired knowledge and/or its impact on performance and 2) how to manage the knowledge acquisition and transfer processes. If joint ventures and alliances are the strategic initiatives through which firms can acquire business knowledge and innovative capability, and if knowledge and innovation are keys to wealth creation, then one way to measure acquired knowledge is to measure wealth created by joint ventures and alliances (i.e., the performance impact). In this dissertation, acquired knowledge is first indirectly measured through the wealth created for shareholders (shareholder value creation) and then directly measured from managerial assessment. The first part is discussed in Chapter 2, whereas the second part is discussed in Chapter 3, 4 and 5.

Researchers, as well as practitioners, see knowledge management from different viewpoints (Davenport, Long and Beers 1998). Some see knowledge management as a

process supporting organizational learning (Huber 1991); others claim that the major task of a firm is to integrate knowledge residing within individual employees so as to achieving knowledge application and innovation (Grant 1996). The first focuses on how firms gather, store, and disseminate knowledge, with or without information technology. The later emphasizes transfers of knowledge among individuals, across functional units, across organizations, or across national boundary. This dissertation adopts the second viewpoint and emphasizes the transfer of knowledge across organizations and possibly across national boundaries (alliances and joint ventures, domestic and international) so as to increase marketing knowledge and achieve marketing innovation in the parent firms. In the second part of the dissertation, the meanings of marketing knowledge transfer and marketing innovation are specified in detail.

The dissertation conceptualizes marketing innovation within the context of strategy innovation. Broadly, innovations can be categorized into two categories: technology innovation and strategy innovation (see Damanpour 1991). Technology innovation focuses on introducing technological solutions to business and customer problems. Strategy innovation, on the other hand, focuses on redefining the problems and creating fundamentally new and superior value (Kim and Mauborgne 1999). This dissertation adopts the later perspective of innovation in order to explore the relationship between marketing innovation and marketing knowledge.

Following Srivastava, Shervani and Fahey (1999), the dissertation defines marketing as as a phenomena embedded in three core marketing processes: product development management (PDM), supply chain management (SCM) and customer relationship management (CRM). These processes emphasize customer value creation

through the accomplishment of the development of new customer solutions, the enhancement of input acquisition and output transformation, and the creation of relationships to external market entities especially channel members and end users. The three processes thus address common marketing tasks and are the core objectives of marketing in most business organizations. Therefore, contextually, marketing knowledge overall refers to marketing knowledge of PDM, SCM, and/or CRM and marketing innovation overall refers to marketing innovation in PDM, SCM and/or CRM.

Various factors have been identified as potential moderators affecting the knowledge management and innovation creation process. These include characteristics of knowledge being transferred (Kogut and Zander 1993), levels of the firm's absorptive capacity (Cohen and Levinthal 1990), and the national cultures of partner firms (Hofstede 1983; Simonin 1999a). Part 1 of the dissertation (Chapter 2) explores the impact of these moderators on shareholder value creation. Part 2 of the dissertation (Chapter 3, 4 and 5) validates the impacts of these factors on marketing knowledge transfer and marketing innovation from a managerial viewpoint.

1.2 Research Questions and Objectives

In Part 1 of the dissertation (Chapter 2), the objectives were as follows.

The first was to indirectly assess the effect of acquired knowledge from the shareholder perspective. If knowledge is the core capability that creates value to firms (Nonaka 1994) and if joint ventures are the ways in which firms can acquire knowledge (Kogut 1988), then one can assume that joint ventures must be knowledge creating entities. Thus, one way to measure knowledge that is acquired through joint ventures is to measure the value that joint ventures created. Although there are various methods for

tapping firm valuations, approaches based on shareholder value (SHV) have received greater support than others (Srivastava, Shervani and Fahey 1998). SHV is based on the net present value (NPV) of future projected cash flows and on perceived growth potential, as opposed to being based on a mere continuation of past performance. Part 1 of the dissertation measures joint venture shareholder value creation to assess joint venture acquired knowledge. The result shows that, overall, there is a positive shareholder value creation associated with announcements of firms' knowledge acquisition through joint ventures.

The second objective of Part 1 was to explore the impacts of moderating factors on shareholder value creation. Drawing from research in organization learning and knowledge management, the dissertation examines the effects of knowledge type, the firm's absorptive capacity and cultural difference on shareholder value creation. To explore these relationships, Part 1 of the dissertation is divided into two distinct studies that serve as preliminary studies for the survey study in Part 2 of the dissertation (Chapter 3, 4, and 5). Specifically, preliminary Study I (Section 2.3) examines whether different types of knowledge (market knowledge, manufacturing knowledge and technology knowledge) that firms seek to acquire from their partners lead to different effects on shareholder value (although all types of knowledge acquisition are expected to lead to positive shareholder value creation). Preliminary Study II (Section 2.4) investigates whether national differences and absorptive capacity moderate shareholder value creation. National differences are expected to negatively moderate the learning process, which results in decreased shareholder value. A firm's absorptive capacity is expected to positively moderate the firm's learning process, which leads to increased shareholder

value creation. Absorptive capacity is measured from industry relatedness, both JV-parent relatedness and partner-to-partner relatedness. Results from Part 1 suggest that, contrary to the result at the aggregate level, access to knowledge may not always result in positive shareholder value creation. Value creation, however, could be influenced by other factors such as the characteristics of transferred knowledge, absorptive capacity (measured directly rather than through industry relatedness), trust and cultural differences. Thus the dissertation includes these variables in the model of the marketing knowledge transfer process in Part 2.

Part 2 of the dissertation (Chapter 3, 4, and 5) proposes a theoretical model and then uses the moderators identified in Part 1 to assess the hypothesized relationships between the mechanisms firms use to transfer marketing knowledge and the outcomes of knowledge transfer. In doing so, Chapter 3 defines the mechanisms firms use to transfer marketing knowledge in the three marketing domains (PDM, SCM, and CRM), the knowledge transfer outcomes (marketing knowledge and marketing innovation) and the moderators, and then examines the relationships among them. Therefore, the objectives of Part 2 were as follows.

The first objective was to re-conceptualize the marketing knowledge construct. Currently, marketing knowledge has been conceptualized as market information, which needs to be processed through knowledge acquisition, information distribution, information interpretation and organizational memory (Moorman and Miner 1997). This conceptualization of knowledge has been well developed in market orientation studies (Jaworski and Kohli 1993). However, the dissertation argues that the marketing knowledge construct should be conceptualized to capture the extent to which firms

actually understand their marketing tasks in the three previously defined marketing domains. That is, the construct should measure how much a firm knows about the tasks, rather than how much information about the tasks is processed.

The dissertation proposes that marketing knowledge can be measured by systematically classifying levels or stages of understanding (Bohn 1994). These stages, ranging from complete ignorance to complete knowledge, also capture the different degrees of knowledge tacitness and learning types. This framework is fundamentally based on how to precisely map, evaluate, and compare levels of cognitive understanding. In this view, better knowledge of the three domains in marketing leads to better performance (such as more innovation in PDM, SCM, and CRM) without incremental physical investment. In contrast to most approaches for measuring knowledge, the nature of the knowledge changes qualitatively with each stage in this framework. Results from the dissertation show that measuring marketing knowledge from this approach provides good construct validity.

The second objective of Part 2 was to re-conceptualize the marketing innovation construct. The dissertation argues that marketing innovation, as part of strategy innovation, should be conceptualized as the capacity to reconceive the existing industry model in ways that create new value to customers, undermine competitors, and produce new wealth for all stakeholders (Kim and Mauborgne 1999). Unlike marketing information and market orientation, marketing innovation has gained limited attention from marketing scholars; the exception is research related to product development, where the focus is on innovative ideas manifested by successful new products.

The dissertation proposes a marketing innovation construct that covers not only the extent to which firms are innovative in that they radically improve their products, but also the extent to which firms are innovative in that they target non-existing demand or customers through demonstrating willingness to lose some existing customers. In addition, the marketing innovation construct also encompasses the idea of building a firm's capabilities through combining existing capabilities with the other companies' capabilities, as opposed to leveraging and extending the current capabilities of the firm. This conceptualization of marketing innovation thus covers the three marketing tasks in PDM, SCM, and CRM domains. The results support the notion that marketing innovation can be conceptualized as encompassing these three business domains.

The third objective was to examine the appropriate means for marketing knowledge transfers among business alliance and joint venture partners. Specifically, Part 2 examines whether parent strategic integration leads to coordination and cooperation *between partners* as well as to knowledge sharing, interaction, and personnel transfer *between the joint venture and parent.* The results support these proposed relationships. Subsequently, the dissertation examines whether coordination and cooperation increase the level of partner-to-partner marketing knowledge transfer. Additionally, the dissertation investigates whether marketing knowledge sharing (from alliance to its parent) and both interaction and personnel transfer between the alliance and its parent increase the level of alliance-to-parent marketing knowledge transfer. The results support the proposed relationships from coordination and cooperation to partner-to-partner knowledge transfer, as well as the proposed relationship between personnel transfer and alliance-to-parent knowledge transfer. The proposed relationships from

knowledge sharing and interaction to alliance-to-parent knowledge transfer are, however, not supported. The conceptualization of knowledge transfer along two distinctive pathways parallels the examination of the two types of industry relatedness (JV-parent and partner-partner relatedness) in Part 1 of the dissertation.

Part 2 of the dissertation then examines whether either partner-to-partner marketing knowledge transfer or alliance-to-parent marketing knowledge transfer (or both) lead to enhanced marketing knowledge in the partner firm. Finally, the last link of the model examines whether the marketing knowledge a firm acquires from business partners leads to enhanced marketing innovation in that firm. Results from the dissertation support these proposed relationships among knowledge transfer, marketing knowledge, and marketing innovation.

The fourth objective of Part 2 was to examine the impact of key moderating factors on the process of knowledge transfer described above and shown in Figure 1.1. In accordance with Part 1, the moderators studied are tacitness (a characteristic of knowledge), levels of absorptive capacity, and national cultures. In addition, Part 2 examines the moderating effect of trust in the learning process of firms forming joint ventures. Specifically, for tacitness, the dissertation hypothesizes that if the level of tacitness is low, then the relationships from cooperation and coordination to partner-to-partner knowledge transfer are stronger than if the level of tacitness is high. Similarly, if the level of tacitness is low, then the relationships from knowledge sharing, interaction and personnel transfer to alliance-to-parent knowledge transfer are stronger than if the level of tacitness is high. The results, however, do not support these proposed effects of tacitness on the relationship between learning mechanisms and knowledge transfers.

For absorptive capacity, the dissertation expects that if the level of absorptive capacity is high, then the relationships from coordination and cooperation to partner-to-partner knowledge transfer are stronger than if the level of absorptive capacity is low. Similarly, if the level of absorptive capacity is high, then the relationships from knowledge sharing, interaction, and personnel transfer to alliance-to-parent knowledge transfer are stronger than if the level of absorptive capacity is low. Additionally, the dissertation argues that absorptive capability plays a role in transforming marketing knowledge into marketing innovation. That is, if the level of absorptive capacity is high, then the relationship between marketing knowledge and marketing innovation is stronger than if the level of absorptive capacity is low. The dissertation found that only the effects of absorptive capacity on the relationships from coordination and cooperation to partner-to-partner knowledge transfer are supported. The rest of the proposed effects of absorptive capacity are not supported.

Trust and cultural distance are partner-related variables, so they are expected to moderate only the learning mechanisms that are related to partner-to-partner knowledge transfer. That is, if the level of trust is high, then the relationships from coordination and cooperation to partner-to-partner knowledge transfer are stronger than if the level of trust is low. However, if the level of cultural distance is low, then the relationships from coordination and cooperation to partner-to-partner knowledge transfer are stronger than if the level of cultural distance is high. The findings show that only the moderating effects of trust on the relationships from coordination and cooperation to partner-to-partner knowledge transfer are supported. The proposed effects of cultural difference and the other proposed effects of trust are not found.

1.3 Methodological Basis

The proposed relationships and the results discussed in the previous sections derive from two distinct approaches, one from the shareholder's perspective and one from a managerial perspective. These approaches demand different methodological bases. In the first part of the research (Part 1), secondary data was used to conduct event analysis. Secondary data sources (Dow Jones News Retrieval and Thomson Financial Security Data) were consulted to identify joint venture announcements. After the parent firms were identified, their stock prices were retrieved from the CRSP (Center for Research in Security Prices) database and event analysis was performed accordingly.

Event analysis or event studies (Brown and Warner 1985) are natural experiments that assess the impact of an event on a firm's market value using expected stock returns as benchmarks. The event (e.g., a company announcement) contains new information, which is then incorporated in the stock price by investors. The stock price response reflects investors' assessments of the new information, which is, in this dissertation, related to the formation of new alliances and joint ventures. Researchers have used event studies to examine the effects of various types of announcements including announcements of celebrity endorsement (Agrawal and Kamakura 1995), new product launches (Lane and Jacobson 1995), service changes (Nayyar 1995), and alliances and joint ventures (Koh and Venkatraman 1991; Reuer and Koza 2000). Also, researchers have shown that stock market responses to announcements provide a reliable indication of long-term performance and managerial assessments (Koh and Venkatraman 1991).

In the second part of the research (Part 2), managers in knowledge management areas, marketing managers, as well as managers responsible for the alliance projects were

interviewed in order to identify the key components of knowledge management and to develop measurement scales. Subsequently, questionnaires were sent out to managers responsible for marketing in alliances or joint ventures. The data were then analyzed using Structural Equation Modeling (SEM) and regression. To overcome the inherent problems associated with small sample size, the analyses were conducted using samples generated from bootstrapping. Details of the bootstrapping procedure are discussed in Section 5.2.

To validate the marketing knowledge construct and other constructs, confirmatory factor analysis using SEM was employed (Anderson and Gerbig 1988; Bollen 1989). To test the proposed relationships, SEM was used. To test the effects of moderators, Seemingly Unrelated Regression (Zellner 1962) and ordinary regression were used. Seemingly Unrelated Regression (SUR) is a method to estimate the parameters of a set of regression equations, whose dependent variable is shared by more than one independent variable. Details of the confirmatory factor analysis and hypothesis testing are discussed in Section 5.3 and 5.4.

1.4 Contributions

The research seeks to explain marketing knowledge and marketing innovation as outcomes of learning from strategic alliances. Since the literature proposes that knowledge management and creation (i.e., innovation) are keys to firm success, the results should be of great interest to practitioners. In addition, the thesis extends the domain of theoretical work on the knowledge-based view of the firm (Grant 1996) and strategy innovation (Hamel 1998; Kim and Mauborgne 1999), and addresses key

measurement operationalization issues. Thus, the contributions of the research fall in five key areas.

First, Part 1 of the dissertation contributes to research by determining conditions in which a performance effect (as a result of knowledge transfer) is detectable in terms of shareholder value creation. For managers, Part 1 offers an insight into partner selection since Part 1 considers shareholder value creation as a result of forming joint ventures with various types of partners: those in related or unrelated industries, as well as similar or dissimilar cultures. Part 1 of the dissertation thus provides opportunities for managers to assess the ramifications of their decisions on the firm's capital gains before the joint venture is actually formed. Theoretically, Part 1 extends research that views joint ventures as ways to acquire knowledge from the partners through examining the impacts of knowledge type, cultural difference and absorptive capacity in light of shareholder value creation.

Second, the dissertation contributes to the understanding of how marketing knowledge and marketing innovation can be assessed by proposing measures that can tap the three key domains of marketing, i.e., new product development, supply chain management, and customer relationship management (Srivastava, Shervani and Fahey 1999). For managers, this should provide an insight into how marketing knowledge and marketing innovation (as performance outcomes) could be assessed. The measurement model provides managers with practical psychometric scales that can be used to assess their knowledge and innovation in the three domains of marketing. For academia, the constructs provide new ways to conceptualize marketing knowledge and marketing innovation. Through these new lenses, researchers should be able to uncover new

relationships concerning the production and utilization of knowledge in a knowledge-intensive business environment. The new conceptualization of marketing knowledge makes assessment of the relationship between knowledge and innovation possible because it provides a clear distinction between marketing knowledge that is transferred (i.e., information) and understanding in the three marketing domains (i.e., knowledge).

Third, the dissertation contributes to the understanding of how knowledge among business partners should be transferred. Part 1 provides preliminary results suggesting a conceptualization of learning in joint ventures along two distinct pathways. These results are validated in Part 2, where marketing knowledge and marketing innovation are hypothesized to be engendered by two sub-processes of knowledge flows, namely partner-to-partner transfer (acquiring knowledge from the partner) and alliance-to-parent firm transfer (transfer knowledge back to the parent); each flow requires a different underlining mechanism. For managers, this part of the dissertation provides insights into the mechanisms by which firms can effectively manage joint ventures and alliances so as to maximize knowledge transfer and consequently to maximize marketing knowledge and marketing innovation in the three marketing domains. For academia, this extends theoretical understanding of the antecedents and consequences of marketing knowledge flows across organization. Traditionally, researchers considered only acquiring knowledge from partners, whereas knowledge transfer back to the parent was automatically assumed.

Forth, the dissertation contributes to the understanding of how trust, the characteristics of knowledge (i.e., tacitness), levels of absorptive capacity, and cultural differences moderate the marketing knowledge transfer process. Part 1 of the dissertation

explores the impact of selected moderators on shareholder value, whereas Part 2 of the dissertation studies these impacts through managerial assessment. For managers, understanding moderators contributes to the area of marketing alliance/joint venture management: the findings should provide insights into what managers should do in light of different knowledge types, and different levels of trust, cultural difference, and absorptive capacity. For researchers, this contributes to the better understanding of the boundary conditions of joint venture theory (where a joint venture/alliance is viewed as a vehicle to learn).

Finally, the dissertation contributes to the understanding of how marketing innovation is related to marketing knowledge. Part 2 of the dissertation provides insight into the antecedents of strategy innovation and the relationship between knowledge gained from business partners and marketing innovation in that firm. Managerially, this provides a direction for managers pursuing innovative ideas in PDM, SCM, and CRM as it sheds light on what leads to innovative ideas in three marketing domains. If marketing knowledge is an antecedent for marketing innovation, managers may need to invest in gaining more knowledge about the product/market they are operating in so as to arrive at more innovative ideas. For academia, this provides a theoretical understanding if innovation comes from within a system (Grossman and Helpman 1991). This should be able to provide insights into sources of strategy innovations in the three marketing domains.

CHAPTER 2

MARKET-BASED EVALUATION

Chapter 2 discusses Part 1 of the dissertation, which consists of two distinct studies that serve as preliminary studies for the survey study in Part 2 of the dissertation (Chapter 3, 4, and 5). In Section 2.1, the chapter discusses shareholder value creation, which is a market-based evaluation, and how it can be used to capture the economic value created by announcements of joint venture formation. Section 2.2 discusses the event study methodology, which is employed in both preliminary studies. Preliminary Study I (Section 2.3) examines whether different types of knowledge that firms seek to acquire from their partners (measured from motivations of the alliance formation) create different patterns of changes in shareholder value. Preliminary Study II (Section 2.4) investigates whether absorptive capacity (measured as industry relatedness) and national differences affect shareholder value creation. Finally, the chapter discusses the findings from the two studies (Section 2.5 and 2.6).

Preliminary Study I and preliminary Study II differ not only in their study objectives, but also in their secondary data sources. Data for preliminary Study I were obtained from *Dow Jones News Retrieval*, whereas data for preliminary Study II were obtained from *Thomson Financial Security Database*. This is because, in preliminary Study I, motivations of joint venture formation must be identified from the content of the announcements, and thus the actual announcements (e.g., news pieces) must be obtained. *Dow Jones News Retrieval* provides these actual announcements. On the other hand, in preliminary Study II, the other characteristics of firms forming joint ventures (such as the

industries they are in) must be identified. This information is more easily and accurately obtained from commercially available sources such as *Thomson Financial Security Database*. Thus, two different data sources are used for the two preliminary studies. The next section describes shareholder value creation, the dependent variable for both preliminary studies.

2.1 Shareholder Value Creation

There is considerable debate regarding how economic value is created by strategic initiatives and how it should be measured (Srivastava, Shervani and Fahey 1998). Although there are various valuation methods, approaches based on shareholder value (SHV) have received greater support than others (Srivastava, Shervani and Fahey 1998). SHV is created by a business process and is based on the net present value (NPV) of future projected cash flows. Although the concept is discouraged by some researchers, due to possible difficulty in projecting a firm's future performance, it is well accepted by the dominant financial perspective (Srivastava, Shervani and Fahey 1998).

Srivastava, Shervani and Fahey (1998) argue that, viewed from the financial perspective, market value created by strategic initiatives (such as alliance and joint venture formations) is best reflected by the NPV of all future cash flows expected to accrue to the firm. This is because NPV firm valuation is based on perceived growth potential and associated risks, as opposed to a mere continuation of past performance. The challenge, therefore, is to demonstrate and measure the value created by resources devoted to marketing activities in terms of the impacts both on current outcomes and on perceptions of future financial performance.

This chapter discusses two studies using SHV to measure the expected future performance of joint ventures. These two studies serve as preliminary studies for the subsequent survey research. The objective of the studies is to identify key moderating factors that may impact joint venture performance. The assumption for the preliminary studies is that factors affecting the future expected value of a marketing joint venture are the same as those affecting marketing knowledge transfer and, subsequently, marketing innovation of the firm. This is based on the premise that knowledge and innovation are keys to wealth creation (Hamel 1998).

The rest of this chapter first discusses the methodology used in both studies. The discussion of hypothesis development, sample selection, measurement and results of preliminary Study I is discussed first, followed by those of preliminary Study II. The hypotheses for preliminary Study I are labeled as H I.1 to H I.3, whereas the hypotheses for preliminary Study II are labeled as H II.1 to H II.4. The final section of this chapter discusses the findings from the two studies.

2.2 Event Studies: Model and Methodology

The two preliminary studies employ event study methodology. Event studies are natural experiments that assess the impact of an event on a firm's market value using expected stock returns as a benchmark. The event (e.g., a company announcement) contains new information that is then incorporated in the stock price by shareholders. Changes in the stock returns thus reflect shareholder assessment of strategic initiatives being announced. In order to investigate the effect of an announcement, the difference between actual and predicted stock returns on the announcement day is computed and abnormal return (AR) for the announcement day is yielded. In order to assess the effects

over time, the abnormal returns are summed over different time intervals around the announcement day. The result of the summation is cumulative abnormal returns (CARs), which tap shareholder value creation. Section 2.2.1 discusses in detail the calculation to obtain CARs.

In the present study, abnormal returns created by joint venture announcement represent increased shareholder value created by joint venture formation. Researchers have previously used event studies to examine the shareholder value creation associated with JV announcements (e.g., McConnell and Nantell 1985; Koh and Venkatraman 1991; Merchant and Schendel 2000; Reuer and Koza 2000). Although some researchers question the use of stock market responses to announcements with regard to strategy implementation (Ravenscraft and Scherer 1987), others have shown that stock-market responses to announcements provide a reliable indication of long-term performance (Healy, Palepu and Ruback 1992) and managerial assessments (Koh and Venkatraman 1991).

2.2.1 Cumulative Abnormal Returns

Shareholder value creation is the dependent variable in both preliminary Study I and preliminary Study II of Part 1 of this dissertation. Shareholder value creation is the measurement of *ex ante* JV performance and is measured using cumulative abnormal stock returns associated with the joint venture announcement. This cumulative abnormal return reflects the shareholders' assessment of the future joint venture performance and is reflected in the stock market response. The procedure of measuring the cumulative abnormal stock returns (CARs) is described by event study methodology.

Following Brown and Warner (1985), each of preliminary Study I and preliminary Study II use a market model in the event study, in which the day on which the joint venture was announced is considered the event date (i.e., day 0 or t=0). The trading days prior to the announcement are day -1, day -2, and so on. The days following the announcement are referred to as day +1, day +2, and so on. Ordinary least squares is used to estimate parameters of the market model during a 141-day estimation period (t = -150 to t = -10). That is,

$$r_{it} = \alpha_i + \beta_i r_{mt} + e_{it}$$

where r_{it} equals firm i's return, β_i represent the systematic risk, r_{mt} is the market return, and e_{it} is the residual on day t. The daily return of the S&P 500 index is used as a proxy for the market return. A firm's risk-adjusted abnormal return (AR_{it}) on day t is:

$$AR_{it} = r_{it} - \hat{\alpha}_i - \hat{\beta}_i r_{mt}$$

where AR_{it} is the abnormal return of firm i on day t, which reveals the impact of new information about firm i on day t. The coefficients (with hats) were determined from each firm's estimation-period regression.

Although the announcement date is considered day 0, it is likely that some firms released their JV announcements on the previous day before the close of the stock market or near the close of the stock market on day 0. Following Nayyar (1995), a 3-day announcement period (Day –1, Day 0, and Day +1) is used, and therefore each firm's cumulative abnormal return (CAR) for the announcement period is computed as:

$$CAR_i = \sum_{t=-1}^{+1} AR_{it}$$

This measure is used as the dependent variable in both preliminary Study I (described in Section 2.3, subsections 1 to 4) and preliminary Study II (described in Section 2.4, subsections 1 to 4).

2.3 Study I: Characteristics of Knowledge

2.3.1 Hypothesis Development

Firms expand abroad to acquire resources, to generate sales, or to diversify markets and suppliers through learning opportunities (Daniels and Radebaugh 1998). These learning prospects range from the opportunities to access tangible resources to intangible resources. Makhija and Ganesh (1997) contended that codifiability of knowledge associated with the business domain being learned is important to learning success. The more codifiable the knowledge, the easier it is to acquire, analyze, and disseminate. The less codifiable knowledge, on the other hand, the more difficult it is difficult to analyze and transmit.

However, additional costs are incurred when doing business abroad, due to the unfamiliarity of the local environment (with, e.g., cultural, legal, political and economic differences) and the coordinating activities across geographic distances (Hymer 1976). Nevertheless, multinational companies (MNEs) can benefit from gaining market knowledge through the partnership. This market knowledge includes knowledge about the host-country's institutional environment, local suppliers and local customers. Forming a JV in a foreign country can lead to use of the firm's distribution channels, their patents and licenses, and their skilled personnel; as well the opportunity exists to internalize the local partner's government relations and marketing know-how (Makhija

and Ganesh 1997). All of these can improve performance and increase firm value. Therefore,

> *H I.1: JVs outside the home country (outside the U.S.) are expected to achieve higher cumulative abnormal returns than JVs within a parent firm's home country (within the U.S.).*

Domestic and international JVs provide firms with important means to acquire knowledge and facilitate organizational learning (Makhija and Ganesh 1997). Access to technical knowledge can lead either to the refinement of existing products and technology or to new breakthroughs that create sustainable competitive advantage. Similarly, access to manufacturing knowledge will enable firms to increase production efficiency and effectiveness. Therefore, it is expected that a firm that acquires technical knowledge and manufacturing knowledge in a JV will create *ex ante* value. Thus:

> *H I.2: Firms that acquire manufacturing knowledge in a JV are expected to achieve higher CARs than firms that do not acquire manufacturing knowledge.*

> *H I.3: Firms that acquire technology knowledge in a JV are expected to achieve higher CARs than firms that do not acquire technology knowledge.*

2.3.2 Sample Selection

Dow Jones News Retrieval was used to identify announcements of joint ventures over the period 1980 - 1999. The content of each announcement was then analyzed in detail to identify the motivation for the joint venture formation. The study focused on JVs between two partners, at least one of which is headquartered in the United States. This search produced 316 observations (i.e., U.S. partners). Subsequently, the Center for Security Price Research (CRSP) was used to obtain daily stock returns for the sample firms for the period 1980-1998. In addition, an online source (Yahoo's finance web site) was used to obtain stock returns of firms that announced joint ventures in the year 1999

because the 1999 stock price data were unavailable from CRSP at the time the study was conducted. If a firm's stock return data was unavailable from CRSP or Yahoo's finance web site, it was removed from the sample.

Two final refinements were then made to the data set. First, the observations that had merger, acquisition, or earnings announcements, as well as those for which analysts made recommendations during the 3-day announcement period (the day of, the day before, and the day after the announcement) were excluded. Second, since the valuation of service firms is usually based on a different market model, service-related firms were taken out. The final sample yielded 240 observations.

2.3.3 Measurement: Classification of Announcement Content

The content in each of 240 announcements was analyzed to determine the objectives of the joint venture formation. Since a firm might join a joint venture for more than one type of learning, these observations are not mutually exclusive. The objectives of the learning were coded into dichotomous variables. **Local market access** is a dichotomous variable that equals one if a U.S. firm is gaining market access in a host country via the joint venture, zero otherwise. **Manufacturing learning** is a dichotomous variable that equals one if the U.S. firm acquires manufacturing know-how in the joint venture, otherwise zero. **Technology learning** is a dichotomous variable that equals one if the U.S. firm acquires technology know-how in the joint venture, otherwise zero. Eighty-two firms were identified to have local market access objectives, 23 firms were identified to have manufacturing learning objectives, and 68 firms were identified to have technology learning motivations. **Shareholder value creation**, the dependent variable,

was measured using cumulative abnormal stock returns associated with the joint venture announcement (see Section 2.2.1).

2.3.4 Analysis and Results

After computing the CARs for each observation, the significance of the CARs in each group was tested. The difference in CARs across the groups was then tested using ANOVA. Table 2.1 presents results showing a positive average valuation effect associated with JV formation of 1.38% ($p < 0.01$). This is consistent with the results of prior JV studies (e.g., McConnell and Nantell 1985; Koh and Venkatraman 1991; Reuer and Koza 2000). JVs within the United States had CARs of 1.77% ($p < 0.01$). In contrast, JVs outside of the United States had CARs of 0.64% ($p < 0.10$). The far right column of Table 2.1 presents the f-statistics for the difference in mean CARs for each of the pairings. In contrast to Hypothesis I.1, the findings reveal that JVs in the U.S. achieved higher CARs than JVs outside the United States. This result was significant at the 1% level.

The results indicate that the CARs for manufacturing learners (0.08%) were nonsignificant, but that non-manufacturing learners reported CARs of 1.52% ($p < 0.01$). The difference in mean CARs is significant at $p<0.10$ level. Furthermore, the difference in CARs of the technology learners versus non-learners was not significant (1.36% versus 1.39%, n.s.), which did not support the predicted direction.

Three way ANOVA was also conducted to confirm the above analysis. The results showed the same conclusion in that local market access was significant ($p<0.05$), manufacturing learning access was significant ($p<0.10$), and technology learning access was nonsignificant ($p = 0.957$). Neither the interaction effect between local market

access and technology learning access nor the interaction effect between local market access and manufacturing learning access was significant (p = 0.357 and 0.930, respectively). The three factor interaction was also nonsignificant (p = 0.271).

TABLE 2.1: Analysis of CARs by Different Types of Knowledge Acquisition

Joint Venture Characteristic	N	Mean CARs (%)	Different from zero (t-stat)	Difference in Means (f-stat)
Total Sample	240	1.38	5.51***	
Access to Local Market				
JVs outside the U.S.	82	0.64	1.84*	
JVs within the U.S.	158	1.77	5.32***	4.76***
Access to Manufacturing Learning				
JVs with Manufacturing Learning	23	0.08	0.91	
JVs with No Manufacturing Learning	217	1.52	5.72***	2.90*
Access to Technology Learning				
JVs with Technology Learning	68	1.36	2.64***	
JVs with No Technology Learning	172	1.39	4.87***	0.01

***=significant at 1% level; **=significant at 5% level; *=significant at 10% level.

2.4 Study II: Absorptive Capacity and Cultural Differences

2.4.1 Hypothesis Development

JV-Parent Relatedness & Organizational Learning

When a joint venture is characterized as a vehicle to learn, the extent to which the venture can acquire and transfer knowledge to its parent becomes a primary factor in determining its success. The ability of a firm to acquire and transfer knowledge depends largely on its experience and familiarity with the knowledge being developed by the JV (Cohen and Levinthal 1990). Cohen and Levinthal (1990) argued that familiarity, or relatedness, increases the firm's organizational learning capability because learning, at the most basic level, requires a common language among the joint venture partners. For

example, a JV partner from the defense industry is unlikely to share common technical language with a JV partner in the retailing industry. The prior related knowledge of a partner, with respect to the knowledge being developed in the JV, would increase its ability to recognize the value of new information, and then assimilate and apply it throughout the parent organization. Thus, to achieve successful knowledge transfer from the joint venture to the parent, there must be a common ground or relatedness between the joint venture and the parent. In other words, a parent in the same industry as the JV is expected to be able to transfer knowledge from the JV to the parent organization more successfully than a parent in an industry dissimilar to the JV. Therefore,

> *H II.1: Parent organizations classified in the same industries as the joint ventures (JV-parent related) are expected to achieve higher cumulative abnormal returns than parent organizations in industries dissimilar to their joint ventures (JV-parent unrelated).*

Codifiability of knowledge is also important to organizational learning capability (Makhija and Ganesh 1997). Knowledge that is highly codifiable can be more easily structured and thus transferred. In contrast, knowledge that is not easily codified is more challenging to acquire and transfer through the parent organization (Makhija and Ganesh 1997; Simonin 1999b). Examples of knowledge that are difficult to codify include new technological breakthroughs, and to a lesser degree, manufacturing, marketing and management processes, especially for those in the high technology industries (Makhija and Ganesh 1997). In high technology industries, there are rapid changes in technology development and thus the necessity of quick preemption strategies (Hagedoorn and Schakenraad 1994). Consequently, in a situation in which transferred knowledge is less codifiable, such as when a parent (or both parent and the venture) are in the high

technology industries, JV-parent relatedness may play a more pronounced role in achieving successful acquisition and transfer of knowledge. Hence,

> *H II.2: The difference between CARs of parent organizations classified in the same industries as the joint ventures (JV-parent related) and those classified in dissimilar industries to their joint ventures (JV-parent unrelated) will be greater in high-technology industries than in low-technology industry.*

Parent-Parent Relatedness

Another important aspect of JV strategy is the extent to which partners are engaged in similar businesses (Rumelt 1974; Singh and Montgomery 1987; Merchant and Schendel 2000). Differences between partners adversely affect JV performance because there is little overlap within which to integrate partners' skills and capabilities. Moreover, lack of relatedness may accentuate differences in the relative strategic importance of the JV to each partner. In the acquisition context, for instance, Singh and Montgomery (1987) contended, "while the specialized resources in related acquisitions may result in increased efficiencies in technological and product market activities, or increased market-specific market power, the efficiency and power gains in unrelated acquisitions are of a more general variety" (p. 380). Their empirical results supported this claim. Therefore, unrelated partners are expected to be less effective in exploiting technical knowledge and to be viewed less favorably by informed investors in the stock market. In contrast, related partners (i.e., related parents) are expected to provide more strategic and organizational compatibility. Thus,

> *H II.3: JVs between partners in related industries (parent-parent related) are expected to achieve higher cumulative abnormal returns than JVs among partners in unrelated industries (parent-parent unrelated).*

Cultural Differences

Culture is an important aspect of cross border activity that can significantly influence JV success (Parkhe 1991). Makino and Beamish (1998) suggested that JVs between partners with similar national cultures should experience higher survival rates and performance levels than JVs between partners with dissimilar cultures. Cultural differences between partners can imply different management styles and knowledge management practices. Cultural differences between countries can lead to misunderstandings about the local market, or to prolonged or reduced knowledge acquisition in the host country market, both of which can adversely affect a foreign firm's performance in the host country (e.g., Parkhe 1991).

Cultural differences also affect a firm's ability to operate with a foreign partner in the joint venture (Barkema, Shenkar, Vermeulen and Bell 1997) and may influence the firm's learning capabilities (Makhija and Ganesh 1997). Cultural differences may create ambiguities and mistrust in the relationship, which can cause conflict or even terminate the JV (Barkema, Bell and Pennings 1996). It is expected that partner cultural differences will adversely influence organizational learning and hence negatively affect cumulative abnormal returns. Therefore, it is hypothesized that:

> *H II.4: JVs between partners with no cultural differences are expected to achieve higher cumulative abnormal returns than JVs between partners with cultural differences.*

2.4.2 Sample Selection

Thompson Financial Security Data (TFSD) was used to identify JV announcements involving manufacturing firms over the period 1997 - 1999. Only JVs between two partners, of which at least one is headquartered in the United States, were

selected. This search from TFSD produced 1,300 joint ventures involving 1,665 U.S. companies. After the joint ventures were identified, the Center for Security Price Research (CRSP) database was used to obtain daily stock returns. Observations were excluded if the firm's stock was not publicly traded, the announcements contained duplicate or missing data, or there were multiple announcements by one firm on the same day. The refinements resulted in 1,015 final observations.

2.4.3 Measurement

The focus on relatedness and knowledge transfer required the classification of parent and JV knowledge into high or low codifiability. This research attempted to classify parent and JV as being in a high technology (low codifiability) or a low technology (high codifiablity) industry. Following Calantone and Schatzel (2000), the research classified high technology industries as those engaged in technology innovation, new product development, or both. High technology industries included: chemicals and allied products (major group SIC 28), industrial and commercial machinery and transportation (major group SIC 35), electronic and other electrical equipment and components, except computer equipment (major group SIC 36), transportation equipment (major group SIC 37), measuring, analyzing, and controlling instruments; photographic, medical and optical goods (major group SIC 38). The rest of the industry groups were classified as low technology industries.

JV-parent relatedness was measured as a dichotomous variable that equals one if the joint venture and the parent were both in the same industry group, otherwise zero. For example, if Thompson Financial Security Data (TFSD) identified that the parent and the JV have the same first two digits for their SIC code, then they were considered related

(and JV-parent relatedness was assigned a value of one). If TFSD identified that the parent and the JV have different first two digits for their SIC codes, then they were considered unrelated (and assigned a value of zero), even though both of them might be in the same category as far as high technology versus low technology is concerned. Similarly, **Parent-parent relatedness** is a dichotomous variable that equals one if the JV partners were in the same industry group, zero if they were in different industry groups based on the first two digits of their respective SIC codes reported by TFSD.

Cultural difference was measured using the Makino and Beamish (1998) typology (Table 2.2), which reflects differences in location of the JVs and partners' countries of origin. The differences in culture were also measured by **Cultural distance,** which is based on Hofstede (1983) culture dimensions (e.g., Kogut and Singh 1988; Barkema, Bell and Pennings 1996). Specifically, this study uses Kogut and Singh (1988) cultural difference equation:

$$CD_j = \sum_{i=1}^{4} ((I_{ij} - I_{iU.S.})^2 / V_i) / 4$$

where CD_j is the cultural distance from the jth country to the United States, I_{ij} is the ith culture dimension for the jth country (see Section 3.4.4 in Chapter 3 for the brief review of cultural dimensions), and V_i is the variance of the index for the ith culture dimension.

Shareholder value creation, the dependent variable, was measured using cumulative abnormal stock returns associated with the joint venture announcement.

2.4.4 Analysis and Results

The significance of the CARs for the total sample, for each JV ownership structure (reflecting cultural differences), for JV-parent relatedness, and for parent-parent relatedness were examined. ANOVA was then used to determine differences in CARs

across these groups. JV-parent relatedness was examined by first comparing differences across the entire sample, and then according to high technology versus low technology industry groups. For partner cultural differences, JVs with a U.S. partner were compared

TABLE 2.2: Ownership Structures and Cultural Difference Between Partners

Panel A:
Ownership Structure: An Adaptation of the Makino-Beamish (1998) Typology

	JVs Within the Firm's Home Country		JVs Outside of the Firm's Home Country		
	Domestic JV	**Home-Country IJV**	**Cross-National JV**	**Host-Country IJV**	**Tri-National IJV**
Location of JV outside the U.S.?	No	No	Yes	Yes	Yes
Cultural Difference between Partners?	No	Yes	No	Yes	Yes
Partner in country where JV located?	Not Applicable	No	No	Yes	No

Panel B:
The Makino-Beamish Typology Applied to the Present Study

	Domestic JV	**Home-Country IJV**	**Cross-National JV**	**Host-Country IJV**	**Tri-National IJV**
Location	U.S.	U.S.	Country A	Country A	Country B
Partner 1	U.S.	U.S.	U.S.	U.S.	U.S.
Partner 2	U.S.	Country A	U.S.	Country A	Country A

Note:
The original Makino and Beamish (1998) had the following classification.
- Intrafirm JVs are JVs formed between affiliated home-country based firms.
- Cross-national DJVs are JVs formed between unaffiliated home-country based firms.
- Traditional IJVs are JVs formed between home-country based and host country based firms.
- Trinational IJVs are IVs formed between home-country and third-country based firms.

to JVs without a U.S. partner. As a test of robustness, regression analysis to determine the effects on CARs of cultural distance between partners, as well as cultural distance between the parent and the JV location was employed.

Table 2.3 presents the results for the total sample and each of the JV ownership structure groups. On average for the total sample, a positive shareholder value effect (CARs = 0.57%; $p < 0.01$) associated with JV formation was found. This finding is consistent with the results of prior JV studies (e.g., McConnell and Nantell 1985; Koh and Venkatraman 1991; Reuer and Koza 2000). The highest shareholder value creation (i.e., the highest CARs) was associated with cross-national IJV announcements (1.55%; $p < 0.05$), followed by tri-national IJV (1.22%; $p < 0.05$) and domestic IJV announcements (0.88%; $p < 0.01$). Cumulative abnormal returns associated with home-country and host-country IJV announcements, 0.72% and -0.23%, respectively, were not statistically significant.

TABLE 2.3: Analysis by Joint Venture Ownership Structure

Joint Venture Ownership Structure	N	Mean CARs (%)	Different from zero (t-stat)
Total Sample	1,015	0.57	3.29***
Domestic JVs	379	0.88	2.61***
Home-Country IJVs	147	0.72	1.55
Cross-National IJVs	41	1.55	2.36**
Host-Country IJVs	326	-0.23	-0.96
Tri-National IJVs	122	1.22	2.37**

***=significant at 1% level; **=significant at 5% level; *=significant at 10% level.

Table 2.4 reports the results for the relatedness between the joint venture and parent. First, the difference in CARs when JVs and parents were in related industries (JV-parent related) versus when JVs and parents were in unrelated industries (JV-parents unrelated) was tested. The results showed that related JV-parents achieved similar CARs to unrelated JV-parents (0.81% versus 0.38%); the difference between these CARs was not statistically significant, providing no support for Hypothesis II.1.

TABLE 2.4: Analysis by Type of JV-Parent Relatedness

Joint Venture Characteristic	N	Mean CARs (%)	Different from zero (t-stat)	Difference in means (f-stat)
JV-Parent Relatedness (Total sample)				
JVs: Related industry	440	0.81	3.19***	
JVs: Unrelated industry	575	0.38	1.56	1.47
JV-Parent Relatedness: Parent in Low technology industries				
JVs: Related industry	213	0.32	1.03	
JVs: Unrelated industry	346	0.70	2.06**	0.60
JV-Parent Relatedness: Parent in High technology industries				
JVs: Related industry	227	1.28	3.21***	
JVs: Unrelated industry	229	-0.09	-0.30	7.15***
JV-Parent Relatedness: Both Parent & JV in Low technology industries				
JVs: Related industry	213	0.32	1.03	
JVs: Unrelated industry	220	0.90	1.92*	1.07
JV-Parent Relatedness: Both Parent & JV in High technology industries				
JVs: Related industry	227	1.28	3.21***	
JVs: Unrelated industry	95	-0.26	-0.48	4.73**

***=significant at 1% level; **=significant at 5% level; *=significant at 10% level.

Next, the sample was analyzed separately according to whether the parents were in high technology versus low technology industries, in order to capture differences in the codifiability level of overall knowledge in these different industry groups. Among parents in low technology industries, differences between CARs of related versus unrelated JVs-parents were nonsignificant (0.32% vs. 0.70%). On the other hand, among parents in high technology industries, related JVs-parents achieved significantly higher CARs than the unrelated JV-parents (1.28% vs. -0.09%; $p<0.01$). This finding supports Hypothesis II.2.

Two tests for robustness were considered. First, the situation in which both the parent and the JV were classified in low technology industries was reexamined. The comparison of low tech related JV-parents with low tech unrelated JV-parents yielded no significant difference in CARs (0.32% vs. 0.90%). Next, the situation in which both the parent and the JV were in high technology industries was reexamined. It was found that high technology related JV-parents achieved significantly higher CARs (1.28% vs -0.26%; $p<0.01$) as compared to the high technology unrelated JV-parents. The finding supports Hypothesis II.2.

Table 2.5 provides the results of comparing *ex ante* performance of JV parents who were in the same industries as their partners with those who were in different industries from their partners. It was found that JVs with related partners achieved similar CARs to JVs with unrelated partners (0.64% versus 0.54%). However, since the difference is nonsignificant, it provided no support for Hypothesis II.3. Then, the sample was separated into low technology versus high technology industries for only the U.S.

parents. In each industry subgroup, there was no significant difference in CARs for related versus unrelated JV partners.

TABLE 2.5: Analysis by Type of Partner-Partner Relatedness

Parent Industry Relatedness	N	Mean CARs (%)	Different from zero (t-stat)	Difference in means (f-stat)
Parent Industry Relatedness				
Parents: Related industries	298	0.64	2.20**	
Parents: Unrelated industries	717	0.54	2.47**	0.067

***=significant at 1% level; **=significant at 5% level; *=significant at 10% level.

Table 2.6 presents the results for partner cultural differences. It was found that JVs with partner cultural differences achieved significantly lower CARs than JVs with no partner cultural difference (0.39% versus 0.95%; $p<0.1$), supporting Hypothesis II.4. In order to assess whether the levels of partner and location cultural differences (cultural distance) are related to *ex ante* JV performance, regression with CARs as the dependent variable was used. In this part of the analysis, Kogut and Singh (1988) formula for partner and location cultural distance was computed. The results indicated that partner cultural distance was negatively related to CARs. An additional comparison was conducted to determine the effect of having local partners (only for JVs whose locations are outside of the U.S.). The result shows that JVs without local partners achieved significantly higher CARs than JVs with local partners (3.11% vs. -0.96%; $p<0.01$). This suggests that, besides partner cultural differences, dependence on the partners may contribute to lower shareholder value.

TABLE 2.6: Analysis by Cultural Difference

Joint Venture Characteristic	N	Mean CARs (%)	Different from zero (t-stat)	Difference in means (f-stat)
Partner Cultural difference				
JVs without cultural difference between partners[1]	420	0.95	3.03***	
JVs with cultural difference between partners[2]	595	0.39	1.48	3.27*
Local Partner (for JV outside of the U.S.)				
JVs: without local partner[3]	163	1.30	3.11***	
JVs: with local partner[4]	326	-0.23	-0.96	11.60***

***=significant at 1% level; **=significant at 5% level; *=significant at 10% level.

1 Includes DJVs (379) and Cross-National IJVs (41).

2 Includes Home-Country IJVs (147), Host-Country IJVs (326), and Tri-National IJVs (122).

3 Includes Cross-National IJVs (41), and Tri-National IJVs (122).

4 Includes Host-Country IJVs (326).

2.5 Discussion for Event Study I and II

Preliminary Study I leads to the conclusion that access to knowledge does not always imply positive returns for the firm, when returns are measured as an increase in shareholder value. The results suggest that there is a liability of foreignness for U.S. firms that partake in JVs abroad. This makes U.S. firms experience difficulty in transferring knowledge across borders and limits their ability to derive core capabilities from the JVs. It seems that knowledge transferability is an important issue when U.S. firms form joint ventures away from their home environment, given the findings that JVs in the United States achieve higher CARS than JVs outside the United States.

The results showed that manufacturing learners did not achieve significant CARs and even reported lower CARs than non-manufacturing learners. This may reflect on the codifiability of manufacturing knowledge, which influences the speed and extent to which manufacturing capabilities can be transmitted (Zander and Kogut 1995). On the other hand, it is inferred from the positive CARs for technology learners that stock-

market investors respond favorably to JV announcements in which a firm can acquire technical knowledge (which is consistent with Mowery, Oxley and Silverman 1996). This positive response, however, is not significantly different from that of non-technology learners.

The finding among technology learners, that JVs in the United States achieve higher CARs than JVs abroad, is consistent with Gulati (1995) argument that distance and cultural differences can obstruct technology transfer. These results provide some support for the claim that knowledge is not as mobile as some researchers have asserted, suggesting that there is a tendency to overestimate the ease with which knowledge is transferred. In addition, they provide some empirical support for the claim that tacit knowledge adversely influences the stability of technology transfer agreements.

Preliminary Study II extends the findings from preliminary Study I by examining the effects of industry relatedness (which is an indicator of the level of absorptive capacity) and the impact of culture differences. It is found that there is no significant difference in the firm performance between related and unrelated JV-parents using the total sample. However, upon closer inspection, related JVs and parents significantly outperform those who are unrelated in high technology industries. However, related versus unrelated JVs and parents in low technology industries are not significantly different. This suggests an influence of knowledge characteristics on the knowledge transfer process. Given the challenges of acquiring, processing, and transmitting low codifiable knowledge from a JV to a parent, any obstacles seem to have a detrimental effect on organizational learning. The results suggest that stock market investors indeed

place a considerable weigh on JV-parent relatedness and its effect on knowledge flow in high technology industries.

The findings from preliminary Study II also suggest that partner-partner relatedness and JV-parent relatedness yield different patterns of effects on shareholder value creation. Although CARs from related JV-parent do not differ significantly from those of unrelated JV-parent, the difference between these two "relatedness" groups becomes significant when industry type (high versus low technology industry) is considered. The effect of parent-parent relatedness on CARs, on the other hand, is not moderated by industry type. Since type of industry affects the impact of JV-parent relatedness but not the impact of partner-partner relatedness, the conceptualization of knowledge flows in two distinct routes (partner-partner knowledge transfer and venture-parent knowledge transfer) appears warranted. These two distinct routes may also involve different mechanisms underlining the knowledge transfer process. Although previous research has studied mechanisms underlining knowledge transfer (e.g., Inkpen and Dinur 1998), the issue has not been discussed in the context of two learning pathways. This issue is thus one focus for the subsequent survey research.

Results from preliminary Study II also illustrate the importance of cultural differences in knowledge transfer. The results are consistent with prior studies that suggest that cultural distance can obstruct the transfer of knowledge from the JV to the parent. For instance, Lyles and Salk (1996) reported that cultural distance can reduce information flow and organizational learning. Meschi (1997) contended that most IJV problems can be linked to cultural factors – at the country and partner levels. His view is supported by different levels of shareholder value created by different combinations of

country and partner cultural differences. Cultural distance can deeply influence all aspects of collaboration, in particular, the knowledge-management process. Mowery, Oxley and Silverman (1996) shared these views, claiming that cultural distance is a major impediment to knowledge transfer between partners.

Further analysis from preliminary Study II (test for the effect of local partner) provides indirect insight into roles the relational variables, such as trust and dependence, play in the knowledge management process. This is consistent with the study by Anand and Khanna (2000), who found significant effects of network and accumulated experience on the alliance shareholder value creation.

2.6 Conclusion for Event Study I and II

Chapter 2 studied knowledge transfer and acquisition from the shareholders' perspective. Results from preliminary Study I suggest that access to knowledge may not result in positive shareholder value creation and that knowledge transfer among JV partners can be influenced by several factors such as the characteristics of transferred knowledge. Results from preliminary Study II suggest that absorptive capacity, cultural differences, and mechanisms of the process of the knowledge transfer itself can affect knowledge acquisition and transfer. Thus, the subsequent survey study will include the effects of these variables on the marketing knowledge transfer process. Results from preliminary Study I and preliminary Study II are summarized in Table 2.7.

Table 2.7: Summary of Preliminary Study I and Preliminary Study II Results

Study I: Hypotheses	Variable Tested	Result
H I.1: JVs outside the home country (outside the U.S.) are expected to achieve higher cumulative abnormal returns than JVs within a parent firm's home country (within the U.S.).	Market Knowledge Gained	Not Supported
H I.2: Firms that acquire manufacturing knowledge in a JV are expected to achieve higher CARs than firms that do not acquire manufacturing knowledge.	Manufacturing Knowledge Gained	Not Supported
H I.3: Firms that acquire technology knowledge in a JV are expected to achieve higher CARs than firms that do not acquire technology knowledge.	Technology Knowledge Gained	Not Supported
Study II Hypotheses	Variable Tested	Result
H II.1: Parent organizations classified in the same industries as the joint ventures (JV-parent related) are expected to achieve higher cumulative abnormal returns than parent organizations in industries dissimilar to their joint ventures (JV-parent unrelated).	JV-Parent Relatedness (Proxy for Absorptive Capacity)	Not Supported
H II.2: The difference between CARs of parent organizations classified in the same industries as the joint ventures (JV-parent related) and those classified in dissimilar industries to their joint ventures (JV-parent unrelated) will be greater in high-technology industries than in low-technology industries.	High versus Low Technology Industries (Proxy for Codifiability)	Supported
H II.3: JVs between partners in related industries (parent-parent related) are expected to achieve higher cumulative abnormal returns than JVs among partners in unrelated industries (parent –parent unrelated).	Partner-Partner Relatedness (Proxy for Absorptive Capacity)	Not Supported
H II.4: JVs between partners with no cultural differences are expected to achieve higher cumulative abnormal returns than JVs between partners with cultural differences.	Cultural Differences	Supported

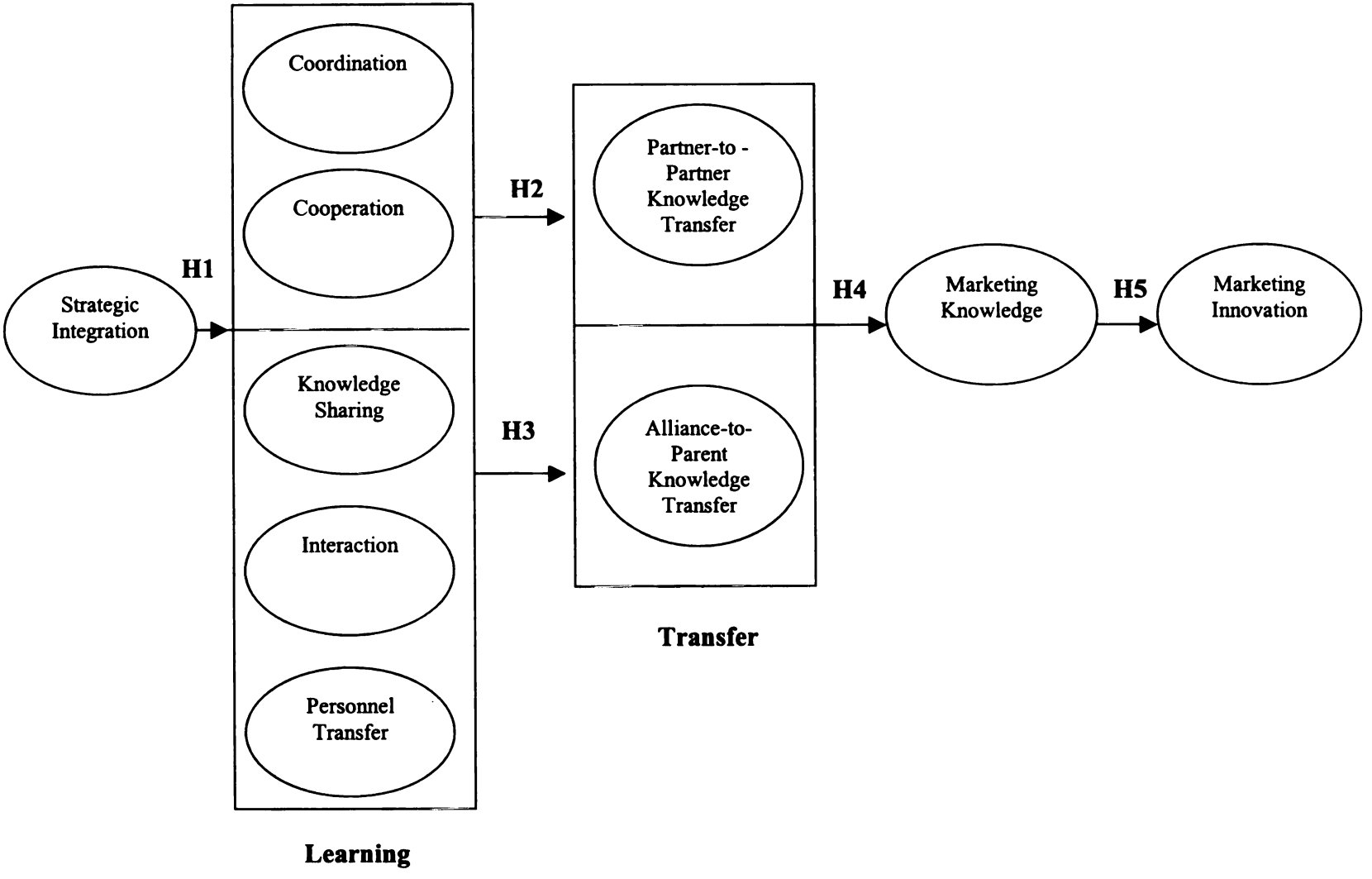
CHAPTER 3

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Chapter two has fully described the analysis of secondary data (Part 1 of the dissertation). The discussion will now turn to Part 2 of the dissertation that covers the analysis of primary data and is presented in Chapter 3 to Chapter 6. Chapter 3 will review the literature and develop hypotheses. Chapter 4 will provide measurements for the constructs and the research method used in the survey. Chapter 5 will report the result of the analysis. Finally, Chapter 6 will provide discussion of the results.

Chapter 3 will first define the domain of the study by briefly reviewing Srivastava, Shervani and Fahey's (1999) framework, which conceptualizes marketing as tasks or phenomena embedded in core business process. The model in Figure 3.1 will then be discussed. The model hypothesizes that integration of the alliance into the parent's strategic plan will lead to more learning mechanism: that is, higher coordination, cooperation, knowledge sharing, interaction and personnel transfer (Hypothesis 1). The learning will consequently result in higher knowledge transfer between partner and partner as well as higher knowledge transfer between alliance and parent (Hypotheses 2 and 3). These transfers result in higher marketing knowledge and subsequently marketing innovation (Hypotheses 4 and 5). After the main effect relationships are hypothesized, the model in Figure 3.1 will then be extended. The extended model includes the moderating effects of tacitness (Hypothesis 6), absorptive capacity (Hypothesis 7), trust (Hypothesis 8), and cultural differences (Hypothesis 9).

Figure 3.1: Hypothesized Main Effect Relationships



3.1 Three Core Processes in Marketing: Domain Specification

Srivastava, Shervani and Fahey (1999) propose a framework that redefines marketing as a phenomena embedded in three core marketing processes: product development management (PDM), supply chain management (SCM) and customer relationship management (CRM). These processes emphasize customer value creation through the accomplishment of the development of new customer solutions, the enhancement of input acquisition and output transformation, and the creation of relationships to external market entities especially channel members and end users. The three processes thus encompass fundamental but common marketing tasks that are critical to attracting and retaining customers (which are the core objectives of marketing in most business organizations). This dissertation will employ this set of three marketing processes as the domain in the study of marketing knowledge and marketing innovation because the set encompasses the core marketing activities and addresses the link between business processes. Thus, marketing knowledge overall refers to marketing knowledge of PDM, SCM, and/or CRM.

3.2 Acquiring and Transferring Marketing Knowledge

Firms are motivated to engage in joint ventures for two basic reasons: to diversify risk and to pool resources (Hennart 1988). When knowledge is the resource that firms wish to acquire through a joint venture, the venture becomes a learning organization and the ability to learn inevitably becomes the prime concern. Following the Inkpen and Dinur (1998) case studies, the learning process of the parent firm can occur either through coordination and cooperation of the alliance partners (partner-to-partner knowledge transfer) or through knowledge sharing, interaction, and personnel transfer

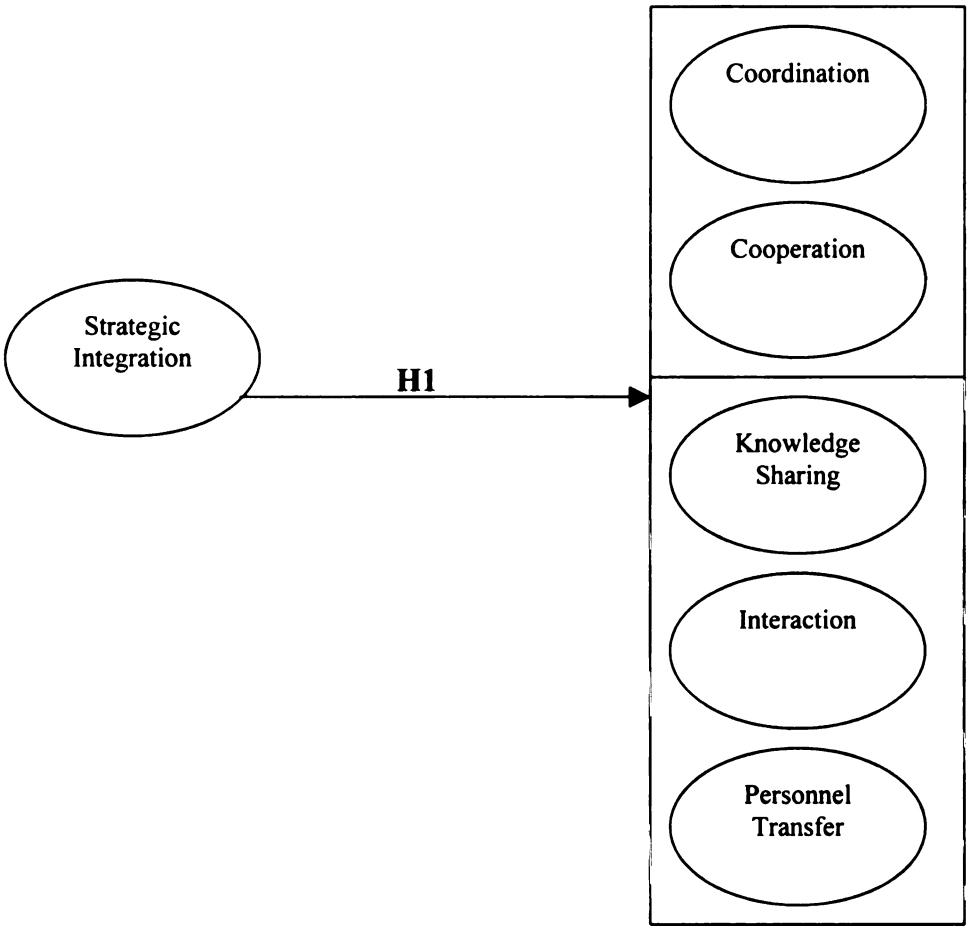
between alliance and its parent (alliance-to-parent knowledge transfer). Partner-to-partner knowledge transfer is defined as the extent to which a parent firm has learned or replicated marketing practices through associating with their business partners. Partner-to-partner transfer represents the learning that occurs through continuous day to day operation of the alliances. Alliance-to-parent knowledge transfer is defined as the extent to which the alliance unit has provided a parent with marketing knowledge it has learned from the partnership. Alliance-to-parent knowledge transfer thus represents the degree to which a firm learns from its alliance unit.

The conceptualization of alliance learning as two distinct sub-processes is in line with the findings from the secondary data analysis in Chapter 2 (Part 1 of the thesis). The event analysis completed in Chapter 2 shows that JV-parent relatedness and partner-partner relatedness yield different patterns of effects on shareholder value creation. When high technology versus low technology industry type is not considered, the difference between CARs from related JV-parent does not differ significantly from CARs from unrelated JV-parent. However, these two "relatedness" groups become significant when the industry type is considered. The effect of parent-parent relatedness on CARs, on the other hand, is not moderated by high versus low industry type. This demonstrates that alliance learning can be divided into partner-to-partner and alliance-to-parent knowledge transfer processes.

In the sections that follow, the antecedents of partner-to-partner and of alliance-to-parent knowledge transfer are discussed. These antecedents are coordination, cooperation, knowledge sharing, interaction and personnel transfer respectively.

However, first, the role of strategic integration in determining coordination, cooperation, knowledge sharing, interaction and personnel transfer is specified (see Figure 3.2).

Figure 3.2: The Role of Strategic Integration



3.2.1 The Role of Strategic Integration

The receptivity to learning is enhanced if the parents and joint ventures are closely related (Hamel 1991) and if the strategic goals of parents and joint ventures are linked and consistent (Inkpen and Dinur 1998). In this dissertation, strategic integration is narrowly defined as the extent to which joint venture strategy is linked with or

incorporated into the parent's strategy. Strategic integration enhances the learning of joint venture partners because it increases interaction and communication between alliance and parent, and this will lead to more opportunity for the parent to acquire new knowledge. When the joint venture is perceived as peripheral to the parent organization, it is likely to yield fewer opportunities to transfer knowledge to the parent. Thus, it is argued that the strategic integration of parent and joint venture is the driver for all mechanisms underlying both kinds of knowledge transfer. Thus:

> *Hypothesis 1: Parent strategic integration leads to coordination (H1a) and cooperation (H1b) between partners. Parent strategic integration also leads to knowledge sharing (H1c), interaction (H1d), and personnel transfer (H1e) between the joint venture and parent.*

3.2.2 Partner-to-Partner Knowledge Transfer

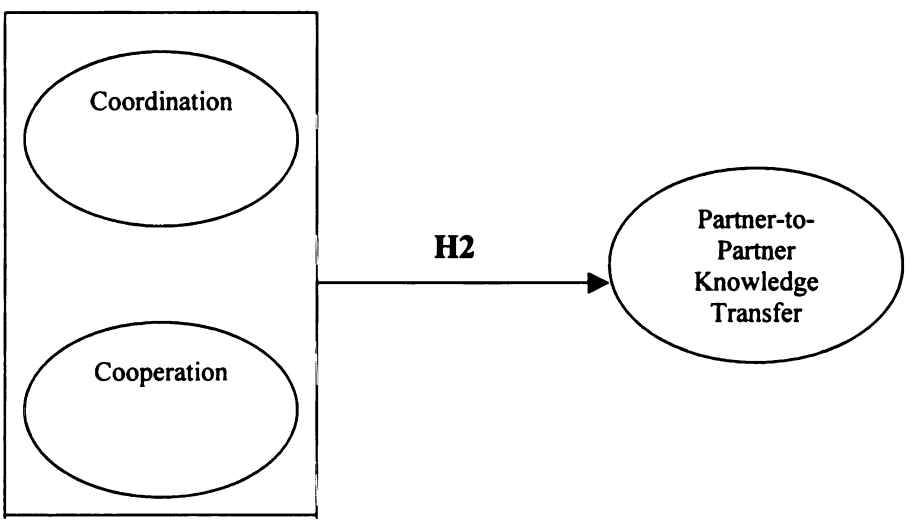
Coordination and cooperation are the two mechanisms underlining partner-to-partner knowledge transfer. In the project management context, coordination is defined as the process of sequencing and scheduling activities in product development (Hoopes and Postel 1999). Coordination thus encompasses ensuring that scare resources, such as knowledge, are allocated efficiently and that task deadlines are set appropriately and communicated clearly. Coordination is considered to be an efficient hierarchical control in formal rule and directive forms that ensure the upward transfer of knowledge from the individual level to the partner level (Grant 1996). Therefore, the higher the coordination between alliance partners, the more knowledge is transferred.

Cooperation, on the other hand, involves the interaction of individual motives, incentives, and firms and is focused on improving communication and reducing goal conflict (Grant 1996). Cooperation helps increase motivations of both knowledge providers and recipients to provide and receive knowledge and, thus, facilitates

knowledge transfer (Szulanski 1996). Cooperation is often regarded as the only mechanism necessary to achieve the integration and transfer of knowledge. However, even in the absence of goal conflict, coordination is not a trivial issue (Grant 1996) and thus both coordination and cooperation must be considered in the knowledge transfer process between the alliance partners. Therefore (see Figure 3.3),

> *Hypothesis 2a: Coordination increases the level of partner-to-partner marketing knowledge transfer.*
>
> *Hypothesis 2b: Cooperation increases the level of partner-to-partner marketing knowledge transfer.*

Figure 3.3: Partner-to-Partner Knowledge Transfer



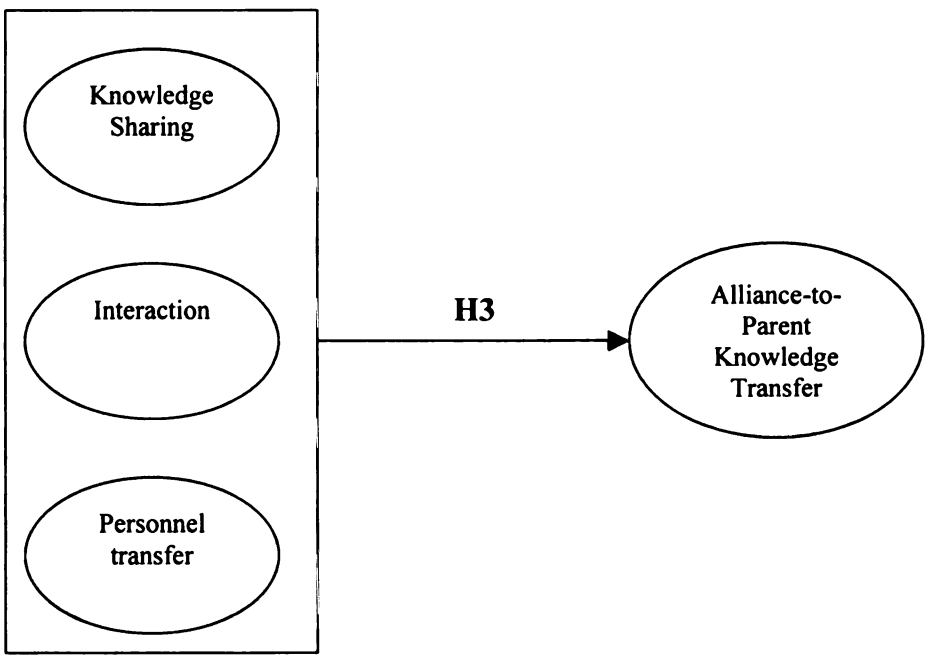
3.2.3 Alliance-to-Parent Knowledge Transfer

Three processes have been identified to affect knowledge transfer between alliance and parent (Inkpen and Dinur 1998). These include knowledge sharing, interaction and personnel transfer between alliance and parent (see Figure 3.4). Knowledge sharing is narrowly defined as a transfer approach involving the structured

meetings between joint venture and parent managers; it is a mechanism to ensure that facts, concepts, and propositions are simultaneously understood by multiple agents (Inkpen and Dinur 1998). Marketing knowledge sharing may be in the form of meetings or formal training, through which parent firms can acquire marketing knowledge from their alliance. Therefore,

Hypothesis 3a: Marketing knowledge sharing from alliance to its parent increases the level of alliance-to-parent marketing knowledge transfer.

Figure 3.4: Alliance-to-Parent Knowledge Transfer



The second process is joint venture-parent interaction. Interactions can be primarily social and involve a variety of groups of people. Interaction provides a means to transform individual knowledge into group knowledge. Joint venture-parent interaction can be in form of informal visit and tours of joint venture facilities or various

leisure activities. These activities increase the chance that knowledge, which is so often experiential in nature, will be transferred. Thus,

> *Hypothesis 3b: Interaction between the alliance and its parent increases the level of alliance-to-parent marketing knowledge transfer.*

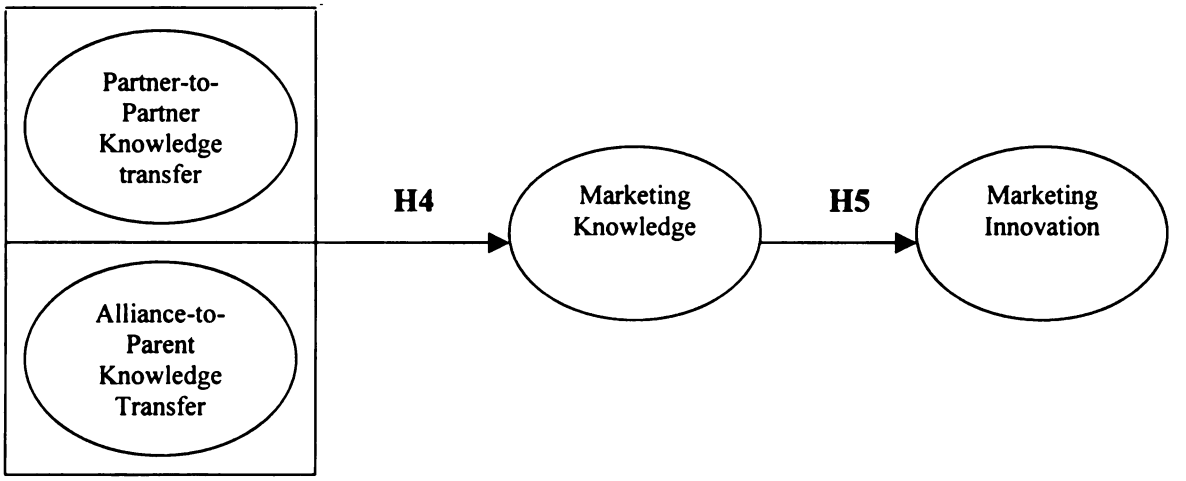
The next mechanism to transfer knowledge from the joint venture to its parent is personnel transfer, which can be considered as a means of mobilizing personnel knowledge. Transfers and rotation of personnel help members of an organization understand the business from various perspectives, which will in turn make knowledge more fluid and easier to transfer (Nonaka 1994). Personnel transfer can be in the form of rotation between the joint venture and parents, or an extensive informal system of personnel transfer such as the promotion of a joint venture manager to a position at parent headquarters. Personnel transfer increases the opportunity that individual knowledge acquired through the joint venture will become group knowledge useful for the parents. Therefore,

> *Hypothesis 3c: Personnel transfer between the alliance and its parent increases the level of alliance-to-parent marketing knowledge transfer.*

3.3 Marketing Knowledge and Marketing Innovation

The previous section (3.2) has discussed mechanisms by which a firm acquires marketing knowledge through the collaboration. The next two sections (3.3.1 and 3.3.2) will discuss the two key constructs (marketing knowledge and marketing innovation) that are the results of marketing knowledge transfers. The definition of marketing knowledge and its relationships with knowledge transfer will be discussed first, followed by a discussion of the definition of marketing innovation and its relationship with marketing knowledge (see Figure 3.5).

Figure 3.5: Marketing Knowledge and Marketing Innovation



3.3.1 Marketing Knowledge

There is no consensus as to how marketing knowledge should be defined and measured. It has been conceptualized as "market information" which needs to be processed through knowledge acquisition, information distribution, information interpretation and organizational memory (Huber 1991; Moorman and Miner 1997; Moorman and Miner 1998). Attempting to focus more closely on marketing activities, some marketing scholars have approached marketing knowledge as "market orientation" (Jaworski and Kohli 1993; Slater and Narver 1995; Sinkula, Baker and Noordewier 1997); however that also focuses on the generation and dissemination of market information. Li and Calantone (1998) operationalize "market knowledge competence", which encompasses customer knowledge process, marketing-R&D interface and competitor knowledge process.

This brief summary of marketing knowledge concepts reveals that the approaches are focused on the process of generating and using market information. While contributing to the advance of marketing practice and theory, scales that can measure exactly how much is known (not how much is done) are still needed. In other words, a "ruler" is needed to measure not only market knowledge but also other aspects of marketing knowledge such as supply chain knowledge and customer knowledge. Drawing from Bohn (1994), this dissertation proposes that marketing knowledge can be measured by systematically classifying levels or stages of understanding (Bohn 1994). These levels or stages, ranging from complete ignorance to complete knowledge, also capture the different degrees of tacitness (see Section 3.4.1).

Although Bohn (1994) attempts to measure and understand only one particular type of knowledge (technological knowledge, i.e., knowledge about how to produce goods and services), his ideas can also be applied for other types of knowledge. Bohn's framework is fundamentally based on how to precisely map, evaluate, and compare levels of knowledge. For example, in this view, better knowledge of product development management (PDM), supply chain management (SCM) and customer relationship management (CRM) leads to better performance without incremental physical investment. In contrast to most approaches for measuring knowledge, the nature of the knowledge changes qualitatively with each stage in this framework. The process of learning from one state to the next also changes. These stages are described as follows:

Stage one -- Complete ignorance. This is the initial stage where it is not known whether a phenomenon exists. For example, ten years ago most marketing managers were not aware that the Internet marketing channel existed. At stage one, there is nothing

that can be done with the variables in the marketing process, and effects on the process appear as random disturbances.

Stage two -- Awareness. Managers begin to know that the phenomenon exists and that it might be relevant to the marketing process. For example, five years ago most marketing managers started to be aware of the existence of the Internet as a way to do business. At this stage, there is still no way to precisely use the variables in the marketing process, but managers could at least begin to investigate them in order to get to the next stage. Learning from stage one to stage two often occurs by serendipity, by making analogies to seemingly unrelated processes, or by bringing knowledge from outside the organization.

Stage three -- Measure. The variables in the marketing process can be more accurately measured, perhaps with some effort. This requires development of specific measures of specified variables. At this stage the variables cannot be controlled. For example, marketing managers now know that there are many business models for Internet marketing and they also know about variables in each model, but they may not be able to control them. However, if the variable is important enough, marketing managers may be able to alter the marketing process in order to exploit or improve the variable's effects. There are two kinds of learning at stage three: (1) passive, natural experiments to determine the relationship between the variable and the output; and (2) studying ways of controlling the variable. Knowledge about how to control the variable is, in effect, a subprocess with its own input and output. For certain variables, knowing how to measure it (stage three) leads almost automatically to knowing how to control it (stage four).

Stage four -- Control of the mean. It is known how to control a variable accurately across a range of levels, although control of it is not necessarily precise; i.e., the mean can be controlled with some (or even considerable) variance around that level. For example, marketing managers now know that, in order to draw significant traffic to their webstores, they have to link their sites to search engines or other webstores. They can also control how many webstores they want to join in order to get a certain number of site visits, although they may not be able to do it accurately. At the very least, the marketing variables that were previously viewed as exogenous disturbances to the process can now be treated as control variables. Reaching stage four also makes further learning easier, because marketing managers can now perform controlled experiments on the variable to quantify its impact on the marketing process.

Stage five -- Process capability (control of the variance). It is known how to control the variables with precision across a range of values. When all of the important variables reach stage five, a marketing process can "accurately" follow a certain plan. Learning from stage four to stage five is a matter of learning to control the various disturbances that affect the input variable. This is a nested subproblem that passes through the stages of knowledge on the way to good control of the input variable. For instance, marketing managers can control the variance of the number of links that generate a certain number of site visits because they now understand that it is not just the number of links that leads to site visits, but also where the link shows on the search results.

Stage six -- Process characterization (know how). It is known how the variable affects the result when small changes are made in the variable. Marketing managers can

begin to fine-tune the marketing process to reduce costs or to change the marketing mix. In the absence of external knowledge, such as through the purchase of market research, controlled experiments with different levels of the variable to determine its effects are the way to reach stage six.

Stage seven -- Know why. Now a scientific model of the process and how it operates over a broad region, including nonlinear effects and interaction effects of the variable with other variables, are known. At this stage, the process can actually be optimized with respect to the stage seven variables. Marketing managers then should be able to handle most contingencies and to use their knowledge to simulate the process in order to study settings they have never tried empirically, such as launching new websites in foreign languages. Learning from stage six to stage seven involves tapping scientific models, running broad experiments across multiple variables to estimate the models, and finding interactions among input variables.

Stage eight-- Complete knowledge. The complete functional form and parameter values that determine the output as a function of all the inputs are known. Process and environment are so well understood that any problems can be anticipated in advance. Stage eight is never reached in practice because it requires knowing all the interactions among variables, which is impossible especially in the social sciences. However, it can be approached asymptotically by studying the marketing process in more and more detail.

In accordance with the conceptualization of knowledge measurement discussed above, marketing knowledge is defined here as the extent to which one has an understanding of the marketing processes embedded in product development, supply

chain management and/or customer relationship management. As a vehicle to learn, the joint venture is a conduit for the transfer of marketing knowledge, which may not be transferred easily through patent or licensing agreement (Hennart 1988; Kogut 1988). This knowledge will be more efficiently transferred if the giver and recipient are linked through common ownership. Joint venture partners are therefore sources of knowledge that is, otherwise, costly for a firm to generate. Thus,

> *Hypothesis 4a: Partner-to-partner marketing knowledge transfer will lead to enhanced marketing knowledge in the partner firm.*
>
> *Hypothesis 4b: Alliance-to-parent marketing knowledge transfer will lead to enhanced marketing knowledge in the partner firm.*

3.3.2 Marketing Innovation

The previous section (3.3.1) discusses the definition of the marketing knowledge construct and the relationship of knowledge transfer to marketing knowledge. The discussion will now turn to the marketing innovation construct and its relationship with marketing knowledge. The conceptualization of marketing innovation below is described within the context of strategic value innovation (Hamel 1998; Kim and Mauborgne 1999).

In accordance with Nonaka (1994), Hamel (1998) maintains that strategy innovation is the key to wealth creation. Strategy innovation is described as the capacity to reconceive the existing industry model in ways that create new value for customers, undermine competitors, and produce new wealth for all stakeholders. Strategy innovation is the only way for newcomers to succeed in the face of enormous resource disadvantages, and the only way for incumbents to renew their lease on success (Hamel 1998). In marketing, the corresponding concept is *marketing* strategy innovation.

Unlike marketing information and market orientation, marketing innovation gains limited attention from marketing scholars, except for research in areas related to new product development. Earlier empirical research focused on R&D expenditure as input into knowledge creation, and patents as outputs. Although patents are very satisfactory indicators of knowledge creation in terms of being documented knowledge whose novelty has been verified by a legalistic research process, patents are only partial measures of the production of knowledge.

Currently, a marketing innovation construct has not been developed. Although Han, Kim and Srivastava (1998) introduced innovation as a mediator between market orientation and performance, such innovation was conceptualized as organizational innovation comprising of technical and administrative innovations (in terms of innovative outputs). This dissertation, however, argues that even though legalized innovation outcomes (such as patents) reflect some level of innovative ideas, innovation should be understood as a process by which the organization creates and defines problems and then actively develops new knowledge to solve them (Nonaka 1994). This is the area that needs to be further developed in order to establish a common ground for understanding the impact of marketing knowledge on marketing innovation (and ultimately marketing performance).

Definition of Marketing Innovation

Kim and Mauborgne (1999) argue that companies that outperform others do not pursue innovation as technology but as value. To Kim and Mauborgne (1999), much innovation research focuses on technology as the central component and thus technologies are seen as solutions to problems. Unlike technology innovation, value

innovation focuses on redefining the problems themselves so as to discover existing but hidden demand or to create totally new demand. Thus, unlike traditional strategic thinking that focuses on competitors and the competitive environment, value innovation is a consequence of market insight gained from creative thinking. This viewpoint is consistent with the theory of innovation and economic growth, which proposes endogenous growth theory where growth and innovation come from within a system (Grossman and Helpman 1991). Following this tradition, the dissertation conceptualizes marketing innovation as the ability of the firm to discover existing but hidden demand or to create totally new demand through the three core marketing processes: product development management (PDM), supply chain management (SCM) and customer relationship management (CRM).

In accordance with Hurley and Hult (1998), the dissertation approaches marketing innovation as an organization's culture that will facilitate the innovative outcomes or implementation of innovation, when adequate resources are present. However, unlike Hurley and Hult (1998), the dissertation defines marketing innovation as the extent to which a firm, *through* product development management (PDM), supply chain management (SCM) and customer relationship management (CRM): (1) seeks radical superior value to the firm; (2) pursues new customers despite losing existing customers; (3) uses the innovative idea to build capabilities. This approach to innovation follows (Kim and Mauborgne 1999)'s conceptualization of strategy innovation.

Characteristics of Marketing Innovation

Strategic value innovation encompasses the three basic building blocks: competition, customers, and corporate capabilities (Kim and Mauborgne 1999).

However, the focus of each building block is different from the traditional strategic focus. For competition, value innovation seeks radically superior value to make the competition irrelevant instead of just aiming to outperform the competition. For customers, value innovation targets the mass of buyers by closely following currently non-existing demands or customers and, at the same time, is characterized by a willingness to lose some existing customers. In building a firm's capabilities, value innovation emphasizes the willingness to combine existing capabilities with the other companies' capabilities, as opposed to leveraging and extending the current capabilities of a company.

Marketing knowledge that firms acquire from forming alliances can increase marketing innovation of the parent firms. This is because marketing knowledge should enable the firm to define current customers and more accurately target the non-existing ones, for example. Besides, marketing knowledge should also provide firms with better understanding of the business environment, which will enable them to foresee the needs of potential new customers. This will consequently encourage firms to seek radically superior products and services to pursue the new customers, despite the risk of loosing the existing ones. Additionally, marketing knowledge should enable firms to identify competent business partners so as to build capabilities through combining existing capabilities with the partner companies. This concurs with Hamel (1998), who argues that strategy innovation can be derived by setting the right set of preconditions. Marketing knowledge can be one of the preconditions that lead to more innovative ideas. Therefore, it is hypothesized that

> *Hypothesis 5: The more marketing knowledge a firm acquires from their business partners, the higher the firm's marketing innovation.*

3.4 Moderating Factors

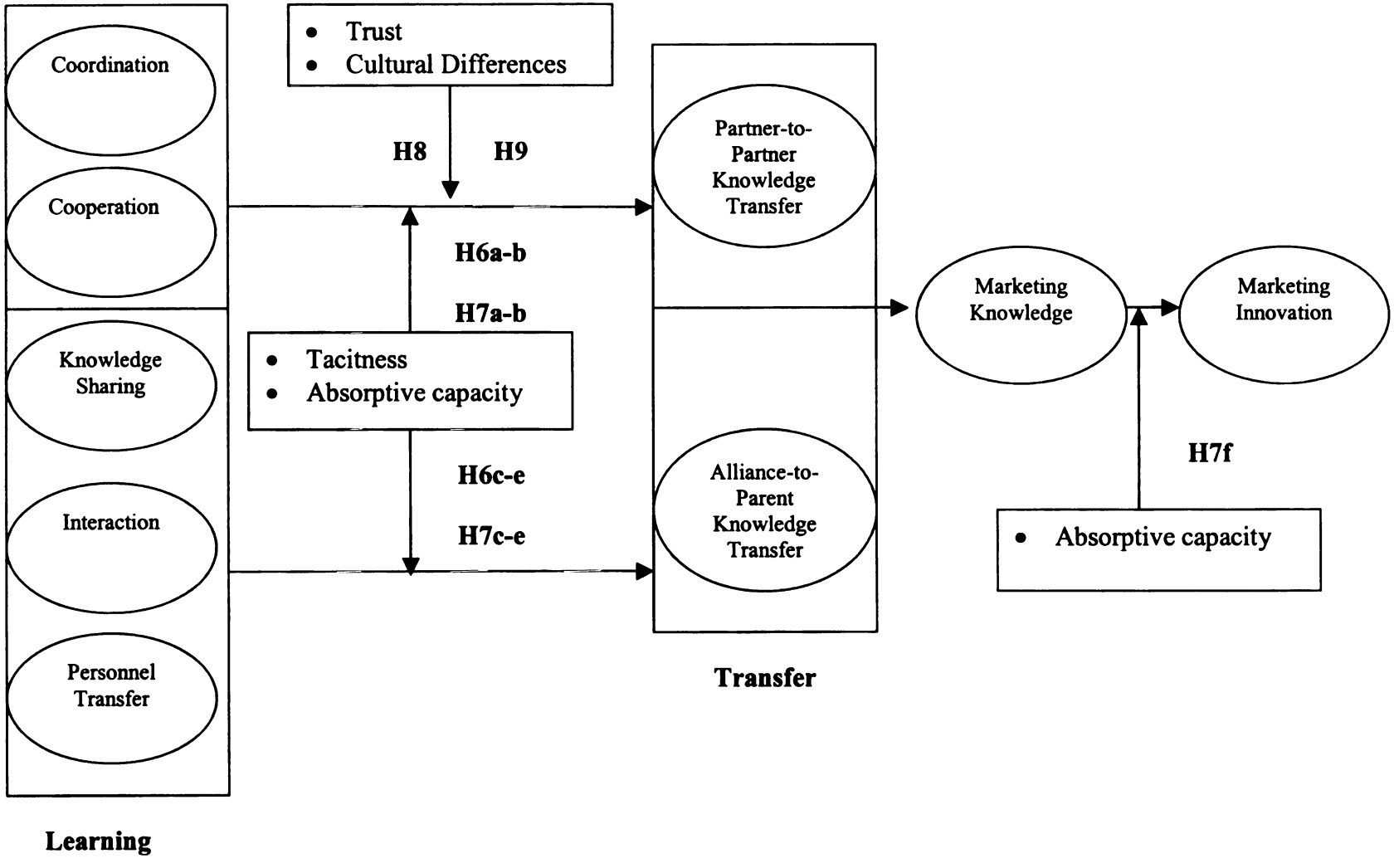
The previous two sections (3.2 and 3.3) discuss relationships among the main constructs (learning mechanism → transfer → knowledge → innovation). The thesis will now turn to moderating effects. The discussion covers four moderators: characteristics of knowledge (tacitness), absorptive capacity, trust, and cultural distance (see Figure 3.6). Some of these moderators have been found to have impacts on shareholder value creation (see Chapter 2). The effects of the factors will be assessed from a managerial perspective.

3.4.1 Characteristics of Knowledge (Tacitness)

Knowledge is commonly characterized into tacit knowledge versus explicit knowledge; they differ in the degree of tacitness, which is defined as the degree of difficulty to teach (teachability) and to put the knowledge in writing (codifiability). Tacit knowledge is low in teachability and codifiability, whereas explicit knowledge is high in both. When tacitness is high, coordination and cooperation become more difficult and knowledge cannot be easily transferred (Kogut and Zander 1993; Simonin 1999b). Thus, in the situation where the level of tacitness is high, the strengths of the relationships from cooperation and cooperation to partner-to-partner knowledge transfer become weaker. On the other hand, in the situation where the level of tacitness is low, the relationships from coordination, and cooperation to partner-to-partner knowledge transfer are stronger. Therefore,

> *Hypothesis 6a-b: If the level of tacitness is low, then the positive relationships from coordination (H6a) and cooperation (H6b) to partner-to-partner knowledge transfer will be stronger than when the level of tacitness is high.*

Figure 3.6: Hypothesized Moderating Effects



When the level of tacitness is high, knowledge resides in an individual more than when the level of tacitness is low. Thus, in the situation where the level of tacitness is high, the relationships from knowledge sharing, interaction and personnel transfer to alliance-to-parent knowledge transfer are weaker. On the other hand, in the situation where the level of tacitness is low, knowledge can be transferred more easily and thus the relationships from knowledge sharing, interaction and personnel transfer to alliance-to-parent knowledge transfer are stronger. Therefore, it is hypothesized that

> *Hypothesis 6c-e: If the level of tacitness is low, then the positive relationships from knowledge sharing (H6c), interaction (H6d), and personnel transfer (H6e) to alliance-to-parent knowledge transfer will be stronger than when the level of tacitness is high.*

3.4.2 Absorptive Capacity

Absorptive capacity is defined as the ability of a firm to recognize the value of new, external information, assimilate it and apply it to commercial end; it is largely a function of prior related knowledge (Cohen and Levinthal 1990). This prior related knowledge or common knowledge enhances absorptive capacity through improving communication needed to recognize new information. However, Cohen and Levinthal (1990) argue that, while common knowledge is related to absorptive capacity, the commonality of knowledge should not be carried so far that the diversity across individuals is diminished, the organization becomes rigid, and consequently absorptive capacity is reduced. Therefore, absorptive capacity should be reflected in some degree of flexibility, adaptation to change and organizational creativity (Lyles and Salk 1996).

Absorptive capacity was found to be a strong predictor of international joint venture performance (Lyles and Salk 1996). This is because when firms already have experience and familiarity with the knowledge being developed, the familiarity helps

firms to recognize useful information, which in turn motivates the firm's learning. Thus, in the situation where absorptive capacity is high, the relationships between learning mechanisms and knowledge transfer are stronger. On the other hand, the relationships between learning mechanisms and knowledge transfers are weakened when the level of absorptive capacity is low. Therefore,

> *Hypothesis 7a-b: If the level of absorptive capacity is high, then the positive relationships from coordination (H7a) and cooperation (H7b) to partner-to-partner knowledge transfer will be stronger than when the level of absorptive capacity is low.*
>
> *Hypothesis 7c-e: If the level of absorptive capacity is high, then the positive relationships from knowledge sharing (H7c), interaction (H7d) and personnel transfer (H7e) to alliance-to-parent knowledge transfer will be stronger than when the level of absorptive capacity is low.*

The product innovation literature posits that absorptive capacity enables firms to more accurately predict technical and industry changes, and facilitates the metamorphosis of technical knowledge into successful product innovation at the commercial end (Cohen and Levinthal 1990). Thus, when marketing absorptive capacity is high, marketing managers should be able to foresee changes in the market environment and be able to apply marketing knowledge to the marketplace. Thus, in the situation where the level of absorptive capacity is high, the relationship between marketing knowledge and marketing innovation will be stronger. On the other hand, in the situation where the level of absorptive capacity is low, the relationship between marketing knowledge and marketing innovation is weaker. Thus, it is hypothesized that

> *Hypothesis 7f: If the level of absorptive capacity is high, then the positive relationship between marketing knowledge and marketing innovation will be stronger than when the level of absorptive capacity is low.*

3.4.3 Trust

Successful interfirm relationship cannot be achieved without trust. From the behavioral perspective, Madhok (1995) posits that there are two dimensions of trust: structural and social dimensions. The structural component relates to the complementarily of resources contributed by each alliance party, whereas the social component relates to the confidence aspect of the collaboration or exchange relationship. Madhok (1995) argues that the structural component is necessary for establishing the relationship, but not enough for maintaining it. Rather, the continuity of the relationship requires a strong social foundation, which will enhance the potential value of synergy gained by pooling complementary assets.

The dissertation focuses on social trust, which is defined as the perceived credibility and benevolence of an alliance partner Doney and Cannon (1997). Perceived credibility is an expectancy that the partner's word or information can be relied on. Benevolence is the extent to which one partner is genuinely interested in the other partner's welfare and motivated to seek joint gain. In the situation where trust between partners is high, there will be opened communication, which is a basis for establishing a knowledge-friendly culture (Davenport, Long and Beers 1998). In addition, in the situation when trust between partners is high, the objectives of the alliance are attained through more sustained and higher quality inputs and lower conflicts (Madhok 1995). Therefore, when the level of trust between partners is high, the relationships from coordination and cooperation to partner-to-partner knowledge transfer are stronger. On the other hand, when the level of trust between partners is low, the relationships from

coordination and cooperation to partner-to-partner knowledge transfer are weaker. Therefore,

> *Hypothesis 8: If the level of trust is high, then the positive relationships from coordination (H8a) and cooperation (H8b) to partner-to-partner knowledge transfer will be stronger than when the level of trust is low.*

3.4.4 Cultural Difference

National culture or national characteristic is defined as the collective programming of the mind which distinguishes the members of one group or category of people from those one another (Hofstede 1983). According to research on value differences as part of national culture conducted on the IBM Corporation employees in forty countries, Hofstede (1983) found that there were four dimensions of national characteristics, namely individualism, power distance, masculinity, and uncertainty avoidance. His more recent research also identified confusian dynamism or long term orientation as a fifth dimension (Hofstede 1983). Literature in the past has shown that national culture affects different business functions, such as new product development (Nakata and Sivakumar 1996), decisiveness and risk adjustment of management (Tse, Lee, Vertinsky and Wehrung 1988) and choice of entry mode (Kogut and Singh 1988).

A substantial amount of research on international joint ventures has shown the impact of national culture on international joint venture management. When the differences in national cultures are high, the ability of firms to learn how to operate with foreign partners in joint ventures is diminished (Barkema, Shenkar, Vermeulen and Bell 1997), and thus the relationships from cooperation and coordination to partner-to-partner knowledge transfer are weaker. On the other hand, when cultural difference is low, the

relationships from coordination and cooperation to partner-to-partner knowledge transfer become stronger. Therefore,

> *Hypothesis 9: If the level of cultural distance is low, then the positive relationships from coordination (H9a) and cooperation (H9b) to partner-to-partner knowledge transfer will be stronger than when the level of cultural distance is high.*

3.5 Summary

The development of the nine major hypotheses is now complete. Table 3.1 (below) lists them in order. Hypotheses 1 through 5 were also represented in Figure 3.1, while Hypotheses 6 through 9 were shown in Figures 3.6. The next chapter discusses research methodology, including the sampling procedures and measurement.

Table 3.1: Summary of the Hypotheses

Hypothesis
Hypothesis 1: Parent strategic integration leads to coordination (H1a) and cooperation (H1b) between partners. Parent strategic integration also leads to knowledge sharing (H1c), interaction (H1d), and personnel transfer (H1e) between the joint venture and parent.
Hypothesis 2a: Coordination increases the level of partner-to-partner marketing knowledge transfer.
Hypothesis 2b: Cooperation increases the level of partner-to-partner marketing knowledge transfer.
Hypothesis 3a: Marketing knowledge sharing from alliance to its parent increases the level of alliance-to-parent marketing knowledge transfer.
Hypothesis 3b: Interaction between the alliance and its parent increases the level of alliance-to-parent marketing knowledge transfer.
Hypothesis 3c: Personnel transfer between the alliance and its parent increases the level of alliance-to-parent marketing knowledge transfer.
Hypothesis 4a: Partner-to-partner marketing knowledge transfer will lead to enhanced marketing knowledge in the partner firm.
Hypothesis 4b: Alliance-to-parent marketing knowledge transfer will lead to enhanced marketing knowledge in the partner firm.
Hypothesis 5: The more marketing knowledge a firm acquires from their business partners, the higher the firm's marketing innovation.
Hypothesis 6a-b: If the level of tacitness is low, then the positive relationships from coordination (H6a) and cooperation (H6b) to partner-to-partner knowledge transfer will be stronger than when the level of tacitness is high.
Hypothesis 6c-e: If the level of tacitness is low, then the positive relationships from knowledge sharing (H6c), interaction (H6d), and personnel transfer (H6e) to alliance-to-parent knowledge transfer will be stronger than when the level of tacitness is high.
Hypothesis 7a-b: If the level of absorptive capacity is high, then the positive relationships from coordination (H7a) and cooperation (H7b) to partner-to-partner knowledge transfer will be stronger than when the level of absorptive capacity is low.
Hypothesis 7c-e: If the level of absorptive capacity is high, then the positive relationships from knowledge sharing (H7c), interaction (H7d) and personnel transfer (H7e) to alliance-to-parent knowledge transfer will be stronger than when the level of absorptive capacity is low.
Hypothesis 7f: If the level of absorptive capacity is high, then the positive relationship between marketing knowledge and marketing innovation will be stronger than when the level of absorptive capacity is low.
Hypothesis 8: If the level of trust is high, then the positive relationships from coordination (H8a) and cooperation (H8b) to partner-to-partner knowledge transfer will be stronger than when the level of trust is low.
Hypothesis 9: If the level of cultural distance is low, then the positive relationships from coordination (H9a) and cooperation (H9b) to partner-to-partner knowledge transfer will be stronger than when the level of cultural distance is high.

CHAPTER 4

RESEARCH METHOD

Chapter 3 described definitions and developed relationships among the constructs under study. Chapter 4 will now discuss the research methodology used to gather and to analyze the primary data (Part 2). The unit of analysis will be first described followed by the sampling frame and sampling method. Measurements of each construct and the structural equation modeling analysis approach will then be described.

4.1 Unit of Analysis

A key informant approach was used to collect data for Part 2 of the study. First, firms that formed strategic alliances or joint ventures in the last three years were identified through the Thomson Financial Security Data (TFSD) Global Joint Ventures and Alliances Database. Second, given the strategic nature of the study, the respondents chosen were senior executives or senior marketing managers (e.g., marketing vice presidents) of these firms. The use of senior management is crucial for the study as they are in positions to (1) provide strategic insights related to the three core business processes, (2) be involved with the domestic or international operation, and (3) be familiar with strategic alliance and joint ventures issues. Senior management is also thoroughly aware of industry issues as well as the internal and external environments of the firm. The managers who are eligible for the study, however, must be knowledgeable about their partner firm and the operation of an alliance or joint venture that is current or occurred in the last three years.

Informants were asked to consider one specific alliance or joint venture that they have formed with one specific partner firm (called "Firm X" on the questionnaire). Considering one specific strategic initiative enabled respondents to provide the information more precisely. Informants were asked to forward the survey to an individual who is more familiar with international and domestic marketing alliances, if they consider themselves inappropriate to respond to the survey.

4.2 Sampling Frame and Sampling Method

The sampling frame was comprised of firms who have announced joint venture or alliance formation in the past three years, where the primary purpose of the venture was related to marketing tasks embedded in the three core business processes. This sampling frame was identified through the Thomson Financial Security Data (TFSD) Global Joint Venture and Alliance database. Firms in manufacturing industries, which are categorized as manufacturers engaging in the development, supplying and marketing of their respective products, were selected. The 1,400 firms were randomly drawn from selected industry groups and the appropriate names and mailing addresses were obtained from a national mailing list of executives holding responsibilities for overseeing marketing departments in the companies.

To encourage response, the following actions were implemented. First, the survey packet included a personalized cover letter indicating that, according to public data, the firm had engaged in joint ventures or alliances and, thus, the manager may find the study relevant and interesting. The letter then introduced the study and identified it as a project conducted for academic purposes. The letter also highlighted the potential value

of the study and that the responses would be kept confidential. A copy of the survey results and research conclusions were also offered.

Second, case studies with a small group of firms (four firms) and discussion with five academic experts ensured that the survey questions were convenient to answer and that the constructs and their relationships were logically hypothesized. Based on their feedback, questions were re-worded and re-designed so that the survey instrument was as short as possible. Originally, it was planned that the study employ a three-wave mail survey procedure (the first survey mailings, followed by reminder postcard mailings two weeks after the first mailing were sent, then second survey mailings two weeks after the reminder postcard mailing). Major terrorist attacks, however, changed everything. The remaining of this section describes a series of events causing changes to the data collection plan and the actions taken to at best manage the data collection process under the given circumstances.

The data collection was originally planned to begin sometime at the very beginning of Fall 2001. However, the September 11 event struck America so hard that it seemed more appropriate to temporarily withhold the planned data collection. Two weeks after the terrorist event (starting September 28, 2001), the first wave of the surveys were sent out, by first class mail, to 1,400 executives. These first wave mailings, however, were sent out just as the anthrax scare broke out. At this point, it was uncertain if the reminder postcard mailings should be sent out as planned. The decision was made to mail them because the postcards including the postage had already been printed and sending out the postcard mailings would not have incurred any additional cost. Thus on

October 12, 2001, reminder postcard mailings were sent out, more in an experimental manner than in the expectation of significant response.

As the nation started to experience a new form of terror (white powder in the mail), it became apparent that data collection was increasingly in jeopardy. On October 15, 2001, President Bush warned "Americans should be on the lookout for suspicious letters and packages" amid growing concerns about anthrax exposure (CNN 2001). On October 20, 2001, two weeks after the first mailing and nine days after the reminder mailings, only ten surveys were returned.

The first attempt to ameliorate the data collection situation (or to minimize the damage) was implemented. From the information provided by an industry contact, it had become obvious that mailroom personnel trashed all suspicious mail (i.e., mail without sender's name or packages with an unknown content), even before it entered the company's building. A small experiment (not part of the planned second wave survey) was conducted. On October 22, 2001, two hundred and seven mailings were sent out to a sample of firms located in the five mid-western states (Michigan, Wisconsin, Illinois, Ohio, and Indiana). The sender's name and a patriotic label were place on outside of the envelope. The patriotic label contained a short patriotic message and informed the readers that the package contained a questionnaire. It also asked them for cooperation (that is, not to trash the package). On November 1, 2001, ten days after the experimental mailings were sent out, only six surveys were returned from the five states.

Next, five hundred phone calls (by four trained callers) were made between November 5 -15, 2001. Only thirteen respondents said they had received the original questionnaires. The phone calls also disclosed that one hundred and six executives were

no longer with the companies, which meant that the effective sampling frame (for the phone call campaign) was 500-106 = 394. A hundred and seven executives or their secretaries agreed to help by either "looking at" or filling out or forwarding the questionnaires. Thus 107 out of 394, or 27 percent, responded in some way. To avoid the "mail room effect", a hundred and seven three-business-day FedEx packages were sent out to these managers or their secretaries. Since the phone call campaign was implemented, twenty-nine questionnaires were returned (or 27 percent return rate calculated based on 107 FedEd packages).

In total, fifty-four surveys were returned. It was difficult to calculate the response rate for this dissertation, since it was impossible to calculate or even to define the "effective" sampling frame. Overall, sixty-two surveys were returned because they were undeliverable and twelve were returned because the executives declined to participate. Numbers from a similar dissertation, conducted two years prior to this dissertation with a comparable sampling frame, were thirty-seven undeliverables while a hundred and ten declined to participate. Comparing these numbers may indicate that the mail was not delivered to the target respondents.

4.3 Constructs and Measurements

Structured survey questions were developed in several stages. First, a comprehensive review of the literature was performed and valid measurement scales were borrowed and adapted. Second, for new constructs, scales were defined and developed based on the extant literature. Most constructs are measured by Likert type scales. When denoted with an asterisk, the measurement is presented as a reversed scale.

Construct measurements are presented below in three categories. The alliance tasks and objectives were asked first to determine the main purpose(s) of the alliance. Second, the construct measurements for the antecedents of marketing knowledge (i.e., learning mechanism and knowledge transfer constructs) are discussed. Third, marketing knowledge and marketing innovation are presented. Finally, the moderating constructs are discussed. All scales are presented exactly as they appeared on the questionnaire.

4.3.1 Alliance Tasks and Objectives

A scale determining the main alliance tasks and objectives is presented first. The scale (see Figure 4.1) was developed based on Srivastava, Shervani and Fahey's (1999) proposed framework that redefines marketing as a phenomena embedded in three core business processes: product development management (PDM), supply chain management (SCM) and customer relationship management (CRM).

Figure 4.1: Alliance Tasks and Objectives Measures

How important or unimportant are the three processes below in the alliance or joint venture that you have formed with your partner Firm X?

	Extremely Unimportant						Extremely Important
New Product Development (for example, design tentative new product solutions)	1	2	3	4	5	6	7
Supply Chain Management (for example, establish and manage logistics; or establish relationships with suppliers and/or retailers)	1	2	3	4	5	6	7
Customer Relationship Management (for example, identify potential new customers)	1	2	3	4	5	6	7

4.3.2 Antecedent Constructs

Scales that measure drivers of marketing knowledge and marketing innovation constructs are developed below. This set of scales includes strategic integration, cooperation, cooperation, knowledge sharing, interaction and personnel transfer.

Strategic Integration

Strategic integration is defined as the extent to which joint venture strategy is linked with or incorporated into the parent's strategy. The construct was measured by new scales (shown in Figure 4.2) developed from Inkpen and Dinur's (1998) conceptualization of strategic integration and Lyles and Salk's (1996) managerial contribution measure.

Figure 4.2: Strategic Integration Measures

	Strongly Disagree						Strongly Agree
1. This alliance with Firm X:							
• is perceived to be peripheral to the your firm.*	1	2	3	4	5	6	7
• is incorporated into your firm's strategic planning process.	1	2	3	4	5	6	7
• is expected to contribute new ideas to your firm.	1	2	3	4	5	6	7
• is expected to provide leadership in particular business areas.	1	2	3	4	5	6	7
2. The strategic goal of the alliance is consistent with your firm's strategic goal.	1	2	3	4	5	6	7
3. Your firm adequately provides the alliance with necessary resources.	1	2	3	4	5	6	7

Coordination

Coordination is defined as the process of sequencing and scheduling activities to ensure that scarce resources (such as knowledge) are allocated efficiently and task deadlines are set appropriately and communicated clearly. Coordination encompasses rules and directives that ensure the upward transfer of knowledge from the individual level to the alliance level. The construct was measured by scales adapted from Sivasdas

and Dwyer's (2000) coordination construct and Maltz and Kohli's (2000) manifest interfunctional conflict. Figure 4.3 demonstrates the adapted scales.

Figure 4.3: Coordination Measures

	Strongly Disagree						Strongly Agree
Concerning your alliance with Firm X:							
1. The different job and work activities related to alliance tasks fit together very well.	1	2	3	4	5	6	7
2. Alliance-related activities are well sequenced/scheduled.	1	2	3	4	5	6	7
3. The routines of your firm and Firm X are well coordinated.	1	2	3	4	5	6	7
4. There exist problems coordinating work activities.*	1	2	3	4	5	6	7
5. The work assignments of people from different firms who work together are well planned.	1	2	3	4	5	6	7

Cooperation

Cooperation refers to the interaction of individual motives, incentives, and/or firms and is focused on improving communication and reducing goal conflict (Grant 1996). The construct was measured by scales adapted from Song, Xie and Dyer's (2000) collaborative behavior construct, scales developed from Grant's (1996) conceptualization of cooperation, and scales adapted from Siguaw, Simpson and Baker's (1998) cooperative norms. The cooperative measure is shown in Figure 4.4.

Figure 4.4: Cooperation Measures

	Strongly Disagree						Strongly Agree
Concerning your alliance with Firm X:							
1. There is a sense of cooperation.	1	2	3	4	5	6	7
2. Your firm tries to exchange complete and accurate information to resolve conflicts.	1	2	3	4	5	6	7
3. Conflicts in goals and objectives exist that discourage cooperation.	1	2	3	4	5	6	7
4. Your firm plays down the differences and emphasizes the common interest.	1	2	3	4	5	6	7
5. Your firm and Firm X are willing to make cooperative changes to make the alliance/joint venture successful.	1	2	3	4	5	6	7

Knowledge Sharing

Knowledge sharing is defined as the transfer approach through the structured meetings between joint ventures and parent managers and is a mechanism to ensure that facts, concepts, and propositions are simultaneously understood by multiple agents (i.e., alliance and parent). The construct was measured by new scales developed from Inkpen and Dinur (1998) and Herzog (2001), as well as scales adapted from Maltz and Kohli's (2000) multifunctional training scales. Figure 4.5 shows the adapted scales.

Figure 4.5: Knowledge Sharing Measures

Managers from the alliance unit and managers from your firm:	Never						Often
• have formal meetings	1	2	3	4	5	6	7
• meet in order to share knowledge	1	2	3	4	5	6	7
• participate in joint training sessions	1	2	3	4	5	6	7
• phone to share knowledge	1	2	3	4	5	6	7
• e-mail to share knowledge	1	2	3	4	5	6	7

Alliance-Parent Interactions

Interactions refer to activities that are primarily social and involved a variety of groups of people. Joint venture-parent interaction is usually in the form of informal visit and tours of joint venture facilities. The construct was measured by new scales (see Figure 4.6) developed from Inkpen and Dinur's (1998) conceptualization, Maltz and Kohli's (2000) social orientation scales, and Sethi, Smith and Park's (2001) social cohesion scales.

Figure 4.6: Alliance-Parent Interaction Measures

Managers from the alliance unit and managers from your firm:	Never						Often
• have personal contact	1	2	3	4	5	6	7
• interact socially (beyond work-related)	1	2	3	4	5	6	7
• maintain close interpersonal relationship	1	2	3	4	5	6	7
• are friendly with each other	1	2	3	4	5	6	7
• share recreational activities	1	2	3	4	5	6	7

Personnel Transfer

Personnel transfer refers to personnel rotation between the joint venture and parents or an extensive informal system of personnel transfer such as promotion of joint venture managers to positions at parent headquarters. The construct was measured by new scales (see Figure 4.7) developed from Inkpen and Dinur (1998) and Song, Xie and Dyer (2000).

Figure 4.7: Personnel Transfer Measures

	Strongly Disagree						Strongly Agree
1. There is some personnel exchange between your firm and the alliance unit.	1	2	3	4	5	6	7
2. There is job rotation between your firm and the alliance unit.	1	2	3	4	5	6	7
3. There is personnel promotion **from** the alliance **to** your firm.	1	2	3	4	5	6	7
4. In **your** firm, being a manager responsible for this alliance is important for career advancement.	1	2	3	4	5	6	7

Partner-to-Partner Knowledge Transfer

Partner-to-partner knowledge transfer is defined as the extent to which a firm has learned or replicated marketing practices through associating with their business partners. The construct was measured by scales adapted from Simonin's (1999b) and Bresman, Birkinshaw and Nobel's (1999) knowledge transfer scales, as well as Doney and Cannon's (1997) and Cannon and Homburg's (2001) amount of information sharing scales. Figure 4.8 shows the adapted scales.

Figure 4.8: Partner-to-Partner Knowledge Transfer Measures

	Strongly Disagree						Strongly Agree
1 Your partner provided a lot of information about the following marketing processes:							
Product Development	1	2	3	4	5	6	7
Supply Chain Management	1	2	3	4	5	6	7
Customer Relationship Management	1	2	3	4	5	6	7

2. Your partner openly shares with your firm confidential information about the following marketing processes:							
Product Development	1	2	3	4	5	6	7
Supply Chain Management	1	2	3	4	5	6	7
Customer Relationship Management	1	2	3	4	5	6	7
3. You and your partner Firm X frequently discuss strategic issue regarding the following marketing processes:							
Product Development	1	2	3	4	5	6	7
Supply Chain Management	1	2	3	4	5	6	7
Customer Relationship Management	1	2	3	4	5	6	7

Alliance-to-Parent Knowledge Transfer

Alliance-to-parent knowledge transfer is defined as the extent to which the alliance unit has provided a parent with marketing knowledge it has learned from the partnership. Alliance-to-parent knowledge transfer thus represents the degree to which a firm learns from its alliance unit. The construct was measured by scales (see Figure 4.9) from Simonin's (1999b) and Bresman, Birkinshaw and Nobel's (1999).

Figure 4.9: Alliance-to-Parent Knowledge Transfer Measures

	Strongly Disagree						Strongly Agree
1. The following business knowledge has been actively transferred **from** the alliance/joint venture back **to your firm.**							
Product Development Knowledge	1	2	3	4	5	6	7
Supply Chain Management Knowledge	1	2	3	4	5	6	7
Customer Relationship Management Knowledge	1	2	3	4	5	6	7
2. Business knowledge you have learned **from** the alliance has contributed **to other projects** in your firm in the following areas.							
Product Development	1	2	3	4	5	6	7
Supply Chain Management	1	2	3	4	5	6	7
Customer Relationship Management	1	2	3	4	5	6	7
3. Because of the knowledge learned from the alliance, your firm has greatly reduced its initial reliance or dependence on the alliance partner in the area of:							
Product Development	1	2	3	4	5	6	7
Supply Chain Management	1	2	3	4	5	6	
Customer Relationship Management	1	2	3	4	5	6	7

4.3.3 Marketing Knowledge and Marketing Innovation Constructs

Marketing Knowledge Construct

Marketing knowledge is defined here as the extent to which understanding exists of the marketing processes embedded in product development, supply chain management and customer relationship management. The marketing knowledge construct was measured based on Bohn's (1994) framework, which is fundamentally rooted in how to precisely map, evaluate, and compare levels of knowledge. The original Bohn's framework contains eight stages ranging from complete ignorance (i.e., complete unawareness) to complete knowledge. However, since complete ignorance is the initial stage where managers do not even know that a phenomenon exists, it cannot be assessed quantitatively. Similarly, complete knowledge is the stage where process and environment are so well understood that managers can foresee any problems in advance. This stage is never reached in practice because it requires knowing all contingencies and interactions among variables, which is impossible especially in the social sciences. Thus, only six stages (awareness, measure, control of mean, control of variance, know how, and know why) were measured. The quantitative level for each scale or for each stage of knowledge was measured using a seven point Likert scale ranging from strongly disagree to strongly agree. Figure 4.10 demonstrates marketing knowledge measures.

Figure 4.10: Marketing Knowledge Measures

	Strongly Disagree						Strongly Agree
With respect to your firm's capability in **Product Development**, the alliance with Firm X has helped <u>your firm</u>:							
• be aware of factors in product development.	1	2	3	4	5	6	7
• determine the relationships between those factors and their outputs.	1	2	3	4	5	6	7
• somewhat control factors in product development.	1	2	3	4	5	6	7
• precisely control factors in product development.	1	2	3	4	5	6	7
• make changes in product development and still achieve the planned result.	1	2	3	4	5	6	7
• use product development knowledge in new markets.	1	2	3	4	5	6	7

	Strongly Disagree						Strongly Agree
With respect to your firm's capability in **Supply Chain Management**, the alliance with Firm X has helped <u>your firm</u>:							
• be aware of factors in supply chain management.	1	2	3	4	5	6	7
• determine the relationships between those factors and their outputs.	1	2	3	4	5	6	7
• somewhat control factors in supply chain management.	1	2	3	4	5	6	7
• precisely control factors in supply chain management.	1	2	3	4	5	6	7
• make changes in supply chain management and still achieve the planned result.	1	2	3	4	5	6	7
• use supply chain management in new markets.	1	2	3	4	5	6	7

	Strongly Disagree						Strongly Agree
With respect to your firm's capability in **Customer Relationship Management**, the alliance with Firm X has helped <u>your firm</u>:							
• be aware of factors in customer relationship management.	1	2	3	4	5	6	7
• determine the relationships between those factors and their outputs.	1	2	3	4	5	6	7
• somewhat control factors in customer relationship management.	1	2	3	4	5	6	7
• precisely control factors in customer relationship management.	1	2	3	4	5	6	7
• make changes in customer relationship management and still achieve the planned result.	1	2	3	4	5	6	7
• use customer relationship management knowledge in new markets.	1	2	3	4	5	6	7

Marketing Innovation Construct

The dissertation conceptualizes marketing innovation as the ability of the firm to discover existing but hidden demand or to create totally new demand through product development management (PDM), supply chain management (SCM) and customer relationship management (CRM). This can be done by (1) seeking radical superior value

to make the competition irrelevant instead of just aiming to outperform the competition; (2) pursuing new customers despite losing existing customers; (3) using innovative ideas to build capabilities through combining existing capabilities with the other firms. The construct was measured by new scales developed from Kim and Mauborgne's (1999) conceptualization of strategy innovation. Figure 4.11 demonstrates marketing innovation measures.

Figure 4.11: Marketing Innovation Measures

	Strongly Disagree						Strongly Agree
In regards to your alliance with Firm X							
1.Your firm achieves radical superior product value to make the competition irrelevant.	1	2	3	4	5	6	7
2.Your firm has radically improved products.	1	2	3	4	5	6	7
3.Your firm has increasingly dominated the market by introducing products with a major advance in buyer value.	1	2	3	4	5	6	7
4.Your firm has targeted buyers by following noncustomers closely.	1	2	3	4	5	6	7
5.Your firm has targeted buyers by willingly losing some existing customers.	1	2	3	4	5	6	7
6.Your firm increasingly thinks in terms of a total customer solution even if some existing customers will be lost.	1	2	3	4	5	6	7
7.Your firm's capabilities have been built by combining existing capabilities with the other firms' capabilities.	1	2	3	4	5	6	7
8.Your firm has built capability on its own by extending current capabilities.*	1	2	3	4	5	6	7
9.Your firm has increasingly viewed forming alliances as a way to leverage capabilities.	1	2	3	4	5	6	7

4.3.4 Moderator Constructs

The extant literature has identified a large number of moderating factors that may have an impact on alliance relationships. The dissertation hypothesizes only relationships that were found to significantly affect knowledge management as identified in the preliminary studies (chapter 2). These include absorptive capacity, tacitness, trust, and cultural differences.

Absorptive Capacity

The construct has been defined as the ability of a firm to recognize the value of new, external information, assimilate it and apply it to commercial end; it is largely a function of prior related or common knowledge (Cohen and Levinthal 1990). Cohen and Levinthal (1990) argue that, while common knowledge enhances absorptive capacity through improving communication, the commonality of knowledge should not be carried so far that the diversity across individuals is diminished (and thus reduce capacity to learn or absorptive capacity). Therefore, the measures of absorptive capacity should also reflect some degree of flexibility, adaptation to change, and creativity organization (Lyles and Salk 1996). This conceptualization differs from that of "marketing innovation" in that it does not focus on outperforming competitors through making competition irrelevant. Thus, absorptive capacity is firm's internal capability to learn. The construct was measured using scales developed from Cohen and Levinthal's (1990) conceptualization of absorptive capacity and scales adapted from Lyles and Salk (1996). The scales are shown in Figure 4.12.

Figure 4.12: Absorptive Capacity Measures

	Strongly Disagree						Strongly Agree
1. Before this alliance, your firm did a lot of market research.	1	2	3	4	5	6	7
2. The product/market of the alliance with Firm X is closely related to that of your firm.	1	2	3	4	5	6	7
3. Your firm encourages application of new knowledge learned from Firm X in your business.	1	2	3	4	5	6	7
4. Your firm promotes creativity in general.	1	2	3	4	5	6	7
5. In general, your firm's team members are of diverse knowledge backgrounds.	1	2	3	4	5	6	7

Tacitness

The dissertation focuses on tacitness, which is defined as the degree of difficulty to teach (teachability) and to put the knowledge in writing (codifiability). The construct was measured using scales (see Figure 4.13) adapted from Hansen (1999) and Kogut and Singh (1988).

Figure 4.13: Tacitness Measures

	Strongly Disagree						Strongly Agree
Concerning your alliance with Firm X:							
1. There exists a useful manual describing marketing processes.*	1	2	3	4	5	6	7
2. Marketing information and decision rules are stored in an electronic database.*	1	2	3	4	5	6	7
3. Knowledge involved in the alliance is sufficiently explained to your firm in writing.*	1	2	3	4	5	6	7
4. New marketing personnel can easily learn the marketing process:							
• by talking to skilled marketing personnel in the alliance.*	1	2	3	4	5	6	7
• by studying a complete set of manuals.*	1	2	3	4	5	6	7

5. In general, what type of knowledge came from the partner Firm X? (Check one that is most applicable)

_____	Data only	_____	Half personal know-how, half reports/documents
_____	Printed Manuals	_____	More personal know-how than reports/documents
_____	Data and Reports	_____	Mainly personal (practical) know-how
_____	All personal (practical) know-how and analysis (or tricks of the trade)		

Trust

The dissertation focuses on social trust, which is defined as the perceived credibility and benevolence of an alliance partner (Doney and Cannon 1997). Perceived credibility is an expectancy that the partner's word or information can be relied on. Benevolence is the extent to which one partner is genuinely interested in the other partner's welfare and motivated to seek joint gain. The measurement scales for trust (see Figure 4.14) were adapted from Doney and Cannon (1997).

Figure 4.14: Trust Measures

	Strongly Disagree						Strongly Agree
Concerning your alliance with Firm X:							
1. Your partner Firm X keeps promises it makes.	1	2	3	4	5	6	7
2. Your firm believes the information that Firm X provides.	1	2	3	4	5	6	7
3. Your partner Firm X is trustworthy.	1	2	3	4	5	6	7
4. Your firm trusts Firm X to keep your firm's best interests in mind.	1	2	3	4	5	6	7
5. Firm X is genuinely concerned with the success of the alliance or joint venture.	1	2	3	4	5	6	7

Cultural Differences

There were two measurements for cultural differences: the partner's country of origin and general cultural difference (or cultural asymmetry). The partner's country of origin was measured to capture national culture or national characteristic, defined as the collective programming of the mind which distinguishes the members of one group or category of people from those of another (Hofstede 1983). General cultural difference, on the other hand, is an unbalanced situation between partners in their aptitude for decoding and interpreting information. General cultural distance scales were adapted from Simonin's (1999a) cultural distance scales and Xiaohua and Germain's (1998) cultural similarity scales. Figure 4.15 shows measurement for cultural differences.

Figure 4.15: Cultural Difference Measures

Country of origin of your partner Firm X is.....
Our agreement covers operations in the following countries (Please list country names or indicate "global" if the agreement covers worldwide operation.).....

	Strongly Disagree						Strongly Agree
1. The national culture of Firm X greatly differs from your firm.	1	2	3	4	5	6	7
2. Language differences are major obstacles in communicating with your partner Firm X.	1	2	3	4	5	6	7
3. Cultural differences between your firm and Firm X inhibit effective communication.	1	2	3	4	5	6	7
4. Your partner Firm X perceives things like your firm does.	1	2	3	4	5	6	7
5. Your partner Firm X behaves like your firm does.	1	2	3	4	5	6	7

4.4 Measurement and Structural Model Testing Approaches

Because of the small sample size (due to the terrorist attacks), the original analysis plan could not be implemented. The original plan was to test convergent and discriminant validity of constructs using confirmatory factor analysis (CFA) in LISREL VIII (Joreskog and Sorbom 1993). The hypothesized relationships among the constructs were to be tested using straight forward structural equation modeling (SEM). To test the moderation model, multi-group SEM analysis (Bollen 1989; Bagozzi and Edwards 1998) was to be used. Instead, multiple intermediate steps involving bootstrapping and Monte Carlo simulations were necessary. These additional analyses, described in detail in Chapter 5, had to be performed before any CFA or SEM could be conducted.

CHAPTER 5

ANALYSIS AND FINDINGS

This chapter details the various steps undertaken to analyze the data collected by the survey methodology comprising Part 2. First, sample characteristics are discussed. Second, the bootstrapping technique is described. Next, measurement issues (convergent and discriminant validities) and hypothesis testing of the main models are examined. Subsequently, measurement issues and hypothesis testing of moderation models are discussed.

5.1 Sample Characteristics

Fifty-four questionnaires were useable in total. The respondents were senior level executives: more than seventy percent of them are in CEO, President, or Vice President positions. Table 5.1 contains the sample characteristics.

Table 5.1: Sample Characteristics

Characteristics	Specifics	Cases	Percent
Respondent Title	CEO/President	21	38.9
	Vice President	17	31.5
	Director/Senior Director	11	20.4
	Managers	5	9.3
Years in current position	Less than 5 years	41	75.9
	5-10 years	9	16.7
	11-15 years	2	3.7
	More than 16 years	2	3.7

To assess non-response bias, the data were divided into two groups based on the date on which they were received. The first group, consisting of the questionnaires

received in the first mailing before the follow up phone calls, represents the early responses. The second group, containing the questionnaires received in the second mailing after the follow up phone calls, represents the late responses. There were 25 cases in the first group and 29 cases in the second group. The two groups were then compared on sales volume and number of employees (Armstrong and Overton 1977). The results are shown in Table 5.2. In the first group, 22 out of 25 respondents reported the annual sales figure, whereas all respondents reported the number of employees. Out of 29 respondents in the second group, 27 reported their annual sales figure, whereas 28 respondents reported number of employees. Based on a comparison of the averages of annual sales and the number of employees, there were no significant differences between these two groups.

Table 5.2: Non-Response Bias

Variable of Comparison	Early Response Mean (n)	Late Response Mean (n)	2-tail Significance Level
Sale (in $ Million)	1732.59 (22)	3932.49 (27)	0.34
Employees	6207.40 (25)	12671.07 (28)	0.30

Because the sample size is small, bootstrapping in combination with Monte Carlo simulation (described in detail in Section 5.3) was conducted before the analyses of the measurement and the main models were carried out. Bootstrapping involves a re-sampling (with replacement) of the original sample, whereas Monte Carlo simulation involves generating multivariate normal distribution data from a known covariance matrix. Since only the respondents remaining after listwise deletion of all cases containing missing values are drawn as bootstrap samples (Joreskog and Sorbom 1996),

data imputation was performed for missing item values using the average scores across constructs. If none of the questions comprising a construct was answered, that particular case was deleted from the sample. Fifty cases remained from the original responses, and these 50 cases are the effective original sample (as opposed to samples that were generated by bootstrapping).

Before bootstrapping was employed, the reliability of the psychometric scales was first evaluated for the effective original sample. Reliability was assessed at this stage (before bootstrapping and simulation) to ensure that the original data had good reliability. Reliabilities were assessed using Cronbach alpha and reported on the right hand columns of Table 5.8 and 5.11.

5.2 Bootstrapping Procedure

Bootstrapping is a general procedure for determining a sampling distribution of a parameter whose theoretical distribution is unknown (Efron 1982; Efron 1987). Bootstrapping was performed in this dissertation for two purposes. First is the use of bootstrapping to estimate model parameters. To overcome the inherent limitations associated with small sample size, marketing and management researchers have commonly employed bootstrapping for this parameter estimation purpose (e.g., Lattin and McAlister 1985; D'Aveni and Ilinitch 1992; Inman and McAlister 1993; Van Trijp, Hoyer and Inman 1996; Brown, Homer and Inman 1998). Second, bootstrapping is used to assess model fit (Bone, Sharma and Shimp 1989). To achieve this second objective, the bootstrapping procedure was conducted in combination with Monte Carlo experiments (Joreskog and Sorbom 1996). The bootstrapping procedures for these two objectives are briefly described below and are summarized in Figure 5.1 (bootstrapping

procedure for parameter estimation) and Figures 5.2-5.3 (bootstrapping procedure for assessing model fit).

5.2.1 Bootstrapping Procedure for Parameter Estimation

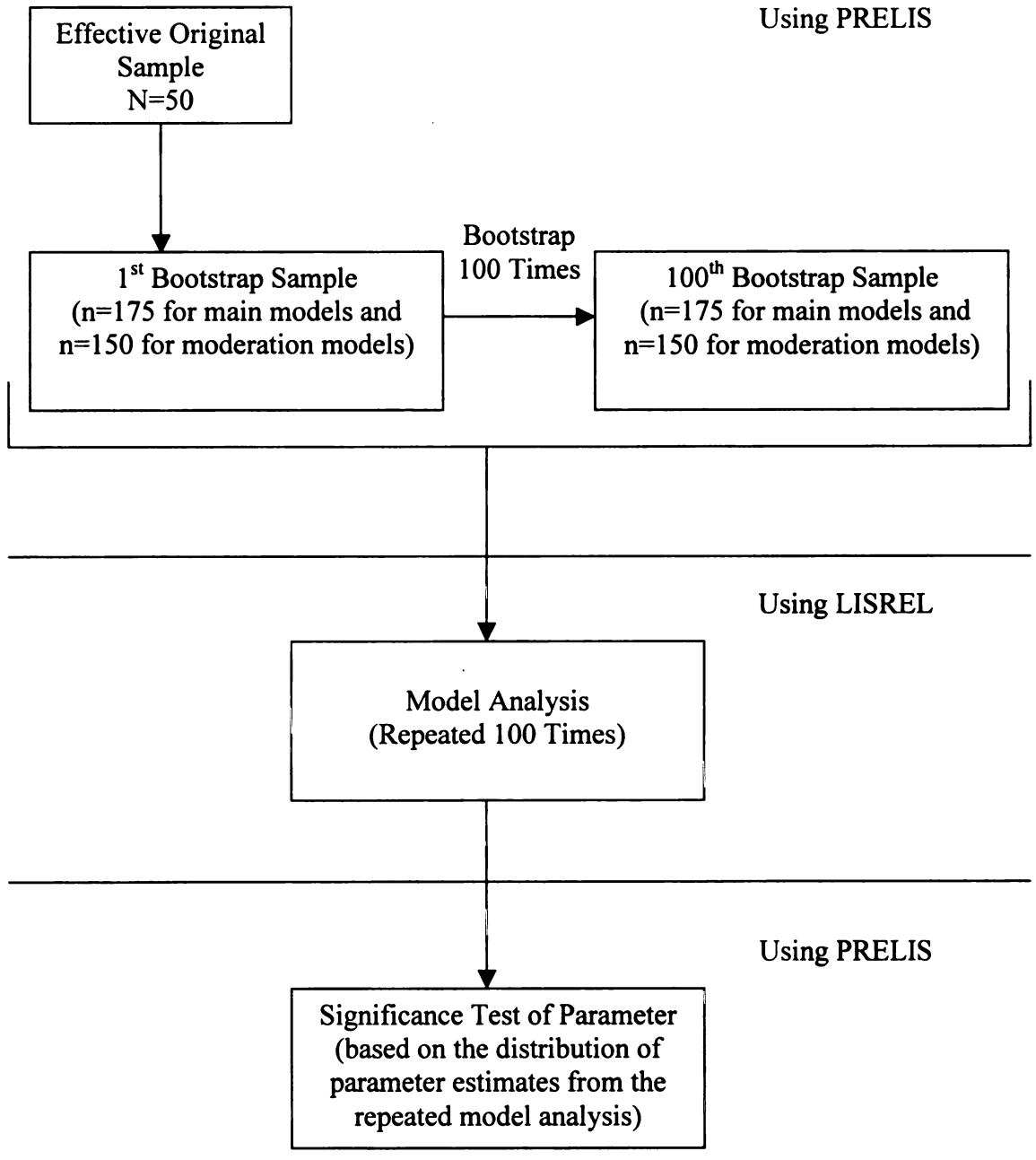
The effective original sample (N=50 in this case) is re-sampled with replacement until the appropriate sample of size (n), referred to as the "bootstrap sample", is obtained (Bone, Sharma and Shimp 1989). To satisfy the minimum sample size requirements for the structural equation modeling (the five respondents to one variable rule of thumb), the original data (N=50) were re-sampled so that sample sizes of the bootstrap samples for the main and moderation models were n=175 and n=150, respectively. It should be noted here that the sample size for the moderation model is smaller than that of the main model because each moderation model has fewer constructs than the latter (see Sections 5.3 and 5.4).

After the original data was re-sampled with replacement until a bootstrap sample of appropriate sample size was obtained, the re-sampling procedure was then repeated 100 times. Efron and Tibshirani (1986) suggested that 100 replications are sufficient for estimating standard error and, in fact, 25 replications are acceptable. Parameters from these 100 bootstrap samples (each with the same sample size) were then serially estimated using LISREL (Joreskog and Sorbom 1993). Following Yung and Bentler (1996), only parameter estimates from the converged bootstrap samples were saved for further statistical testing. Bootstrap samples with nonconverged or improper solutions were deleted. Finally, the mean of the resulting distribution of each parameter estimate that had been saved was then tested for statistical significance using PRELIS (Joreskog

and Sorbom 1996). The bootstrapping procedure for parameter estimation is summarized in Figure 5.1

It should be noted here that only matrices of unstandardized parameters can be retrieved and saved from bootstrapping model analysis. This may be because the main applications of bootstrapping to covariance structure analysis concern estimation of standard errors, construction of confidence intervals and model testing (Yung and Bentler 1996) and these applications do not require standardized solutions. Thus, the evaluation of construct loadings and constructs (in Sections 5.3.1 and 5.4.1) must be based on criteria such as reliability, the significance levels of unstandardized loadings and model fit.

Figure 5.1: Bootstrapping Procedure for Parameter Estimation



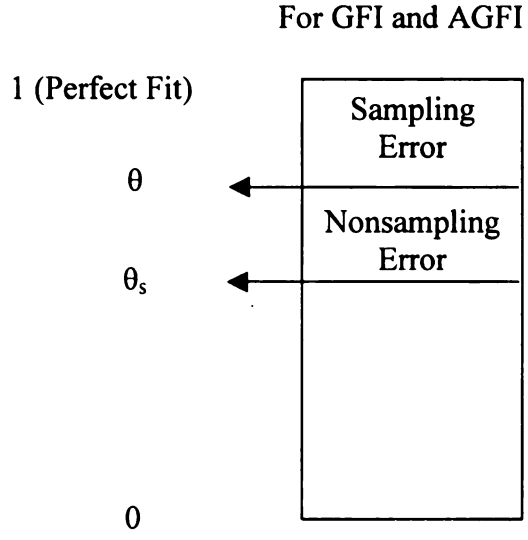
5.2.2 Bootstrapping Procedure for Assessing Model Fit

The bootstrapping procedure for assessing model fit involves separation of errors into sampling versus nonsampling errors (such as error due to model misspecification). The procedure is briefly discussed below. Detailed discussion of the procedure can be found in Bone, Sharma and Shimp (1989).

The procedure starts with estimating model parameters from the original sample data and obtaining the reported fit indices. Any less than perfect fits reported from the model analysis are due to both sampling and nonsampling errors. For example, if GFI and AGFI reported from the analysis of the original sample data are 0.81 and 0.70, the decreases in GFI of 0.19 (=1-0.81) and AGFI of 0.30 (=1-0.70) are respectively due to both sampling and nonsampling errors.

To obtain only the sampling error, the fitted covariance matrix from the original sample model analysis for estimating parameters must first be retrieved. The multivariate normal distribution data (with sample sizes 175 and 150 for main model and moderation model, respectively) are then generated from the retrieved covariance matrix. The data generation (simulation) is repeated 100 times. While model testing using this fitted covariance matrix from the original sample reports a perfect fit (that is, GFI=1 and AGFI=1), the fit indices from model testing of the simulated bootstrap samples will not be perfect. Instead, the less than perfect fit indices represent only sampling errors. Once the sampling error of the data is obtained, the nonsampling error can be calculated, since the value of less than perfect fit due to nonsampling error equals the average of fit indices obtained from model analysis of simulated bootstrap samples (θ) minus the value of the fit index for the original sample data (θ_s), as illustrated in Figure 5.2.

Figure 5.2: Sampling Error Versus Nonsampling Error



To assess if the sampling error is significantly different from total error, the bootstrap-t value (BST-value) can be calculated. Following Bone, Sharma and Shimp (1989), the BST-value equals $(\theta - \theta_s)/S_{\theta,}$ where θ and S_θ are the values of the average and standard errors of fit indices obtained from model analyses of simulated bootstrap samples and θ_s is the value of the fit index from the original sample data. Again, θ represents only sampling error, whereas θ_s includes both sampling and nonsampling errors. If the BST-value is statistically significant, it means that the less than perfect fit of the model is significantly less than what would be expected due to sampling error alone. That is, if BST value is significant, it implies that the less than perfect fit of the model is also due to nonsampling error.

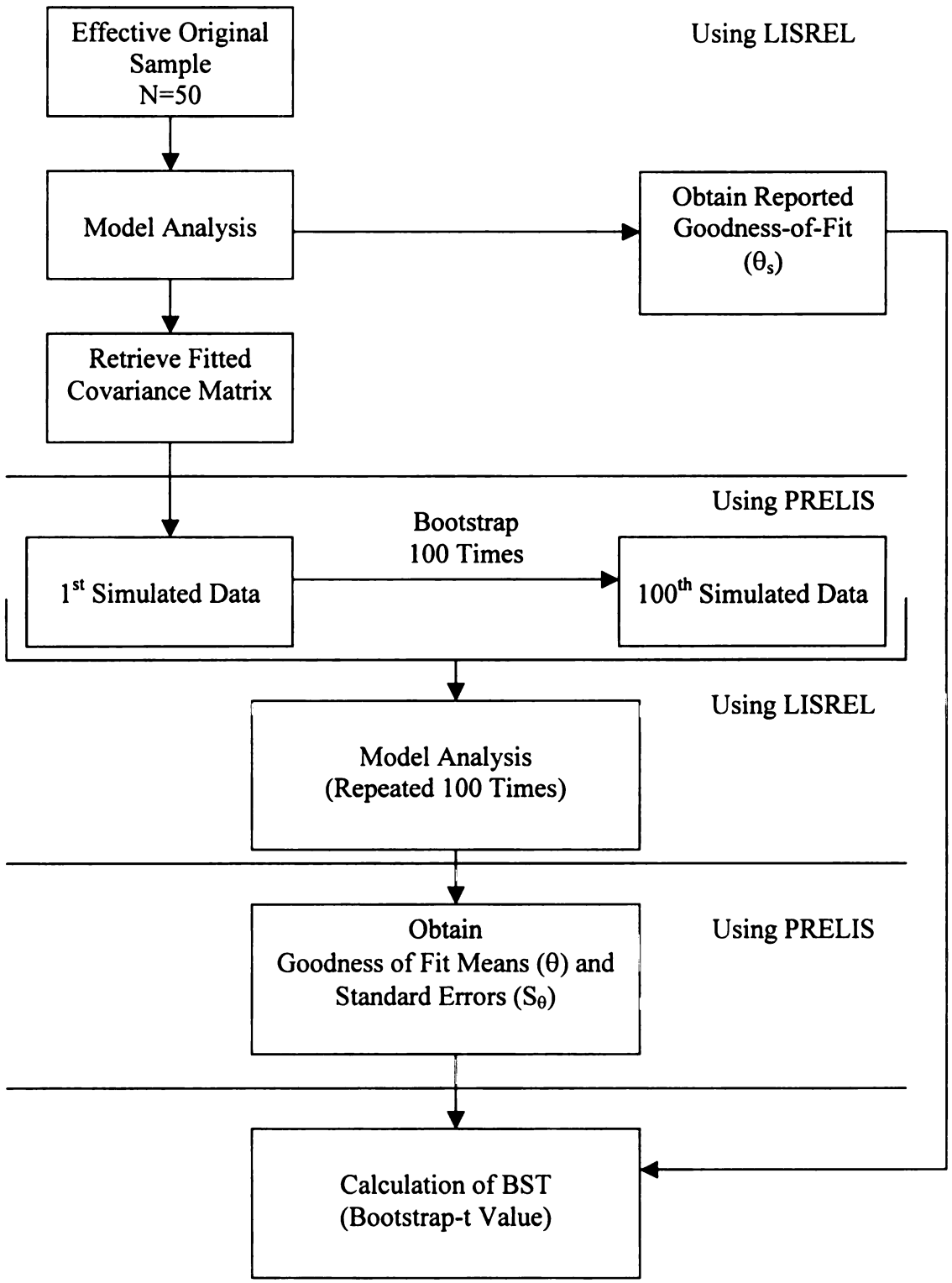
The final issue regarding the use of bootstrapping for assessing model fit concerns which fit indices should be used. Following Bone, Sharma and Shimp (1989), the absolute fit indices (GFI and AGFI) were chosen for this purpose because the absolute fit indices directly assess how well an *a priori* model reproduces the sample data (Hu and

Bentler 1995). In other words, the absolute fit indices compare the hypothesized model with no prespecified model at all (Byrne 1998). In addition to absolute fit indices, the dissertation also provides two incremental fit indexes (CFI and RFI) that measure how much better the model fits as compared to the baseline model. Because the use of these two indices for bootstrapping model evaluation was not considered by Bone, Sharma and Shimp's (1989), they are presented in this dissertation only to provide additional information and will not be used to determine the model fit.

It should be noted that Bone, Sharma and Shimp (1989) also used RMR. However, based on their illustration, RMR gives results inconsistent with GFI and AGFI results. The preliminary analysis done in this dissertation also showed that RMR is so sensitive to sampling error that less than perfect fit due to sampling error can be higher than less than perfect fit due to sampling and nonsampling error combined. This shows that RMR may not be a good index for the evaluation of model fit when bootstrapping is used. Thus, only GFI and AGFI were used to evaluate model fit in this dissertation.

The final index for assessing model fit in bootstrapping is the normed fit index (Bone, Sharma and Shimp 1989). The normed fit index (NFI) in the context of Bone, Sharma and Shimp (1989), is the ratio of fit indices estimated from the original data (θ_s) to average fit indices from the bootstrapping procedure (θ). The higher the NFI, the less severe the lack of model fit due to nonsampling error. While there is no objective cutoff as to which level of NFI is high enough to declare a significant model, Bone, Sharma and Shimp (1989) suggested that, for practical purposes, NFI above 0.80 indicates a significant model fit. The bootstrapping procedure for assessing model fit is summarized in Figure 5.3.

Figure 5.3: Bootstrapping Procedure for Assessing Model Fit



Having described the bootstrapping procedures for estimating parameters and for evaluating model fit, the model testing of main and moderation models will now be discussed. The measurement and structural model testing of the main models will be discussed first in Section 5.3, followed by the measurement and structural model testing of the moderation models in Section 5.4.

5.3 Main Model

This section describes measurement and structural model testing for Hypotheses 1 to 5. The measurement models are assessed in Section 5.3.1 and the hypothesis testing is discussed in Section 5.3.2.

5.3.1 Measurement Validation for Main Models

There are ten constructs in the main models; eight antecedents to the marketing knowledge construct, the marketing knowledge construct, and the proposed consequence of marketing knowledge (i.e., marketing innovation). The reliabilities from the original effective sample (N=50) were first evaluated through the computation of Cronbach's alphas. Items with low loadings were discarded. Subsequently, the original effective sample was bootstrapped and the convergent validity and discriminant validity of the proposed constructs were evaluated through a series of confirmatory factor analyses (CFAs). Specifically, five measurement models were tested as follows:

1) CFA for antecedents of marketing knowledge;

2) CFA for marketing knowledge construct;

3) CFA for marketing knowledge construct and its antecedents;

4) CFA for marketing innovation; and

5) CFA for marketing knowledge and marketing innovation constructs.

Details and results of the above CFAs are described below. It should be noted here that the CFA of all ten constructs was not performed because not all ten constructs will be tested simultaneously during hypothesis testing. Rather, the hypothesis testing will be divided into two models: (1) marketing knowledge and its antecedents; (2) marketing knowledge and marketing innovation.

CFA for Antecedents of Marketing Knowledge

The dissertation is interested in the firm behaviors that lead to marketing knowledge transfer, and in how that transferred knowledge is related to incremental marketing knowledge. Overall, there are eight constructs antecedent to marketing knowledge. The first construct is strategic integration, which examines the extent to which alliance strategy is linked with or incorporated into the parent's strategy. Strategic integration is related to five other constructs capturing firms' behaviors (cooperation, coordination, knowledge sharing, interaction and personnel transfer). There are two constructs measuring the extent to which knowledge is transferred: partner-to-partner knowledge transfer and alliance-to-parent knowledge transfer.

After deleting items with low loadings, there were three items comprising each construct. Reliabilities for strategic integration, cooperation, coordination, knowledge sharing, interaction, and personnel transfer were 0.78, 0.86, 0.87, 0.87 and 0.83 respectively. Partner-to-partner knowledge transfer and alliance-to-parent knowledge transfer were each measured by three scales representing transfer with respect to PDM, SCM and CRM. Reliabilities of partner-to-partner knowledge transfer and alliance-to-parent knowledge transfer were 0.73 and 0.76 respectively. All average loadings from the bootstrap procedure were highly significant ($p<0.01$; two-tailed) with unstandardized

loadings ranging from 0.66 to 1.79, demonstrating good convergent validity. The confidence interval around mean of the bootstrap sample correlation between any two latent constructs did not contain one, showing good discriminant validity. Use of the bootstrapping procedure to evaluate model fit revealed good model fit as shown in Table 5.3.

Table 5.3: Evaluation of Fit Indices: CFA for Antecedents of Marketing Knowledge

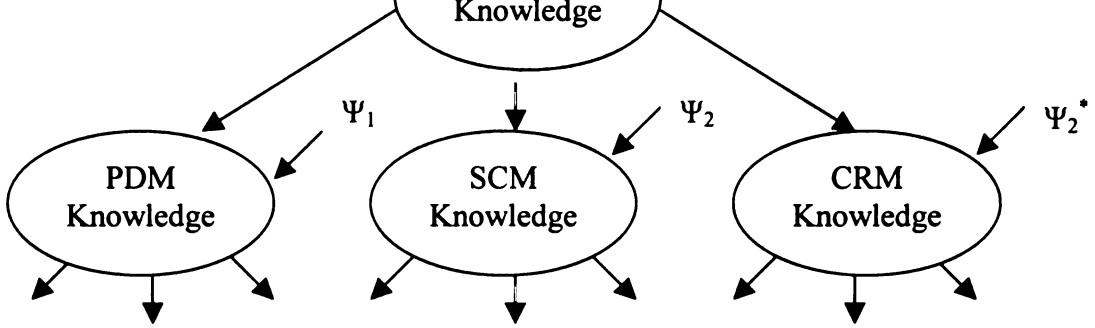
Fit Indices	Fit Indices From Original Sample Model (θ_s)	Average Fit Indices (θ) From Bootstrapping of Simulated Data (Standard Error)	BST	Less than Perfect Fit Due to Sampling Error	Less than Perfect Fit Due to Nonsampling Error	NFI (θ_s/θ)
GFI	0.70	0.793 (0.014)	6.64	0.207	0.093	0.88
AGFI	0.60	0.723 (0.018)	6.83	0.277	0.123	0.83
CFI	0.86	0.857 (0.017)	-0.18	0.143	-0.003	1.00
RFI	0.59	0.744 (0.019)	8.11	0.256	0.154	0.79

CFA for Marketing Knowledge

The marketing knowledge construct is conceptualized as levels of understanding ranging from awareness of business process (i.e., PDM, SCM and CRM), to control of process outputs, and ultimately to use of knowledge in the new business settings. The initial analyses of reliabilities and construct item loadings revealed that items loaded on each business process they measure and do not load directly on the marketing knowledge construct. That is, the items loaded on the respective business processes of PDM, SCM and CRM. A second order factor analysis of marketing knowledge was therefore performed.

To measure marketing knowledge based on its conceptualization, three scales were selected for each of the three business processes. The scales ranged from awareness of the business process, control of process outputs, and use of knowledge in a new market. A second order marketing knowledge construct was modeled so that the three scales related to each business process loaded on that process's knowledge (i.e., first order factors). The three first order factors then loaded on the marketing knowledge construct. The proposed second order marketing knowledge construct is shown in Figure 5.4.

Figure 5.4: Second Order Factor Model of Marketing Knowledge Construct



* PSI 3 was constrained equal to PSI 2 to overcome "just identified" problem.

The results of analyzing this second order marketing knowledge construct demonstrated good second order construct validity. The means of item loadings (based on bootstrapping) for both first and second order factors were all highly significant ($p<0.01$; two-tailed). The unstandardized item loadings ranged from 0.88 to 1.12 for the first order factors and 0.73 to 0.99 for the second order loadings. Reliabilities of the first order factors for PDM knowledge, SCM knowledge, and CRM knowledge were 0.86,

0.93, and 0.91 respectively. The results of model fit evaluation, assessed using bootstrapping procedure and listed in Table 5.4 below, demonstrated an acceptable model fit.

Table 5.4: Evaluation of Fit Indices: CFA for the Marketing Knowledge Construct

Fit Indices	Fit Indices From Original Sample Model (θ_s)	Average Fit Indices (θ) From Bootstrapping of Simulated Data (Standard Error)	BST	Less than Perfect Fit Due to Sampling Error	Less than Perfect Fit Due to Nonsampling Error	NFI (θ_s/θ)
GFI	0.82	0.895 (0.022)	3.41	0.105	0.075	0.92
AGFI	0.67	0.812 (0.040)	3.55	0.188	0.142	0.83
CFI	0.91	0.921 (0.024)	0.46	0.079	0.011	0.99
RFI	0.78	0.852 (0.033)	2.18	0.148	0.072	0.92

CFA for Marketing Knowledge Construct and its Antecedents

Having conducted individual CFAs on groups of variables for the first main model, a comprehensive CFA was conducted. Thirty-three items were modeled to load onto eleven constructs (eight marketing knowledge antecedents and three first order factors of the marketing knowledge construct). All average loadings from the bootstrap procedure were highly significant ($p<0.01$; two-tailed) with unstandardized loadings ranging from 0.75 to 1.77 (demonstrating good convergent validity). The confidence interval around the mean of the bootstrap sample correlation between any two latent constructs did not contain one, showing good discriminant validity. Discriminant validity at the item level was performed by specifying as start values the parameters estimated from bootstrapping, rerunning the CFA model with the original sample, then obtaining the modification indices (MI). Of 363 (11 constructs by 33 items) cross-loading checks,

only 14 were significant (MI >3.84). Ten of them are less than 5 and three of them are less than 10. Only one cross loading is considered very significantly high (from Product Development Knowledge to PPTF1, see Table 5.8), for which MI equals 21.47. The NFI related to GFI as shown on Table 5.5, indicated a good model fit, whereas the NFI for AGFI showed an average model fit. This is because the AGFI adjusts for the degrees of freedom in the specified model. Relatively large decreases in NFI for GFI as compared to AGFI can be expected in large models with high degrees of freedom.

Table 5.5: Evaluation of Fit Indices: CFA for Marketing Knowledge Construct and its Antecedents

Fit Indices	Fit Indices From Original Sample Model (θ_s)	Average Fit Indices (θ) From Bootstrapping of Simulated Data (Standard Error)	BST	Less than Perfect Fit Due to Sampling Error	Less than Perfect Fit Due to Nonsampling Error	NFI (θ_s/θ)
GFI	0.60	0.740 (0.013)	10.77	0.260	0.140	0.81
AGFI	0.49	0.668 (0.017)	10.47	0.332	0.178	0.73
CFI	0.73	0.843 (0.016)	7.06	0.157	0.113	0.87
RFI	0.48	0.726 (0.018)	13.67	0.274	0.246	0.66

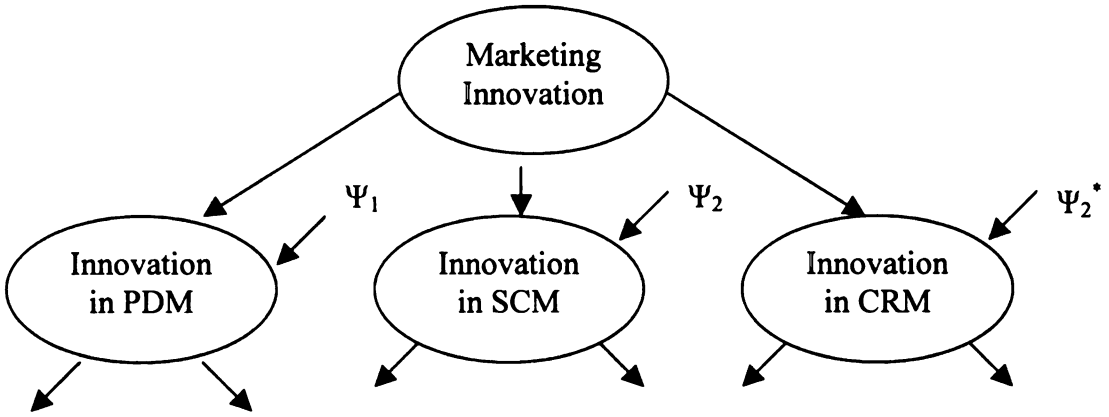
CFA for Marketing Innovation

Marketing innovation captures the ability of firms (as a result of the alliance) to uncover demand through PDM, SCM and/or CRM knowledge. This measure is relative to the expectations that firms had regarding what they sought from an alliance. The scales were therefore weighted by the relative importance scales before any analysis. The initial analysis of these weighted scales showed that nine items measuring marketing innovation loaded into three factors, capturing PDM, SCM, and CRM, and did not load

directly on the innovation construct. Thus, a second order factor analysis of marketing innovation was performed.

The second order marketing innovation construct was modeled so that the three scales from each business process loaded on each process's innovation (first order factors). Confirmatory factor analysis, however, demonstrated that only two items loaded on each area of innovation. Pearson's correlations of the two scales for innovation in the PDM, SCM and CRM areas were 0.84, 0.71 and 0.67 respectively. The three first order factors were then loaded on the marketing innovation construct. The proposed second order marketing innovation construct is shown in Figure 5.5.

Figure 5.5: Second Order Factor Model of Marketing Innovation Construct



* PSI 3 is constrained equal to PSI 2 to overcome "just identified" problem.

The results of the second order marketing innovation model analysis showed that the means of the item loadings (derived from the bootstrap procedure) for both the first and the second order factors are all highly significant ($p<0.01$; two-tailed). The means of the unstandardized item loadings (based on bootstrapping) were high. These ranged from

1.451 to 1.933 for the first order factors and 0.63 to 0.85 for the second order factors, with the exception of the second order loading of innovation in PDM which was 0.21. However, even though the unstandardized second order item loading for PDM innovation was not high, it was highly significant ($p<0.01$; two-tailed). Considering this result and taking the excellent model fit reported in Table 5.6 into account, the second order marketing innovation construct was considered adequate. Table 5.6 shows that NFI for GFI and NFI for AGFI were 0.99 and 0.97 respectively. In addition, the low BST-value shows that the less than perfect fit is not significantly due to nonsampling error.

Table 5.6: Evaluation of Fit Indices: CFA for Marketing Innovation Construct

Fit Indices	Fit Indices From Original Sample Model (θ_s)	Average Fit Indices (θ) From Bootstrapping of Simulated Data (Standard Error)	BST	Less than Perfect Fit Due to Sampling Error	Less than Perfect Fit Due to Nonsampling Error	NFI (θ_s/θ)
GFI	0.97	0.981 (0.009)	1.22	0.019	0.011	0.99
AGFI	0.91	0.943 (0.027)	1.22	0.057	0.033	0.97
CFI	1.00	0.990 (0.011)	-0.91	0.010	-0.010	1.01
RFI	0.93	0.944 (0.028)	0.50	0.056	0.014	0.99

CFA for Marketing Knowledge and Marketing Innovation Constructs

Having conducted individual CFAs for the second order marketing knowledge and marketing innovation constructs, a CFA for both constructs was performed. Fifteen items were modeled to load on six first order factors; PDM knowledge, SCM knowledge, CRM knowledge, Innovation in PDM, Innovation in SCM and Innovation in CRM. All average loadings from the bootstrap procedure were highly significant ($p<0.01$; two-tailed). Discriminant validity at the item level revealed that none of the modification indices is significant except for Supply Chain Knowledge construct and KNOWCR3 and

Product Development Innovation construct and KNOWPD3 (MI = 5.60 and 5.36, respectively). Unstandardized loadings ranged from 0.95 to 2.39, demonstrating good convergent validity. The confidence interval around the mean of the bootstrap sample correlation between any two latent constructs did not contain one, showing good discriminant validity. NFI for both GFI and AGFI (from bootstrapping) shown on Table 5.7, indicated a good model fit.

Table 5.7: Evaluation of Fit Indices: CFA for Marketing Knowledge and Marketing Innovation Constructs

Fit Indices	Fit Indices From Original Sample Model (θ_s)	Average Fit Indices (θ) From Bootstrapping of Simulated Data (Standard Error)	BST	Less than Perfect Fit Due to Sampling Error	Less than Perfect Fit Due to Nonsampling Error	NFI (θ_s/θ)
GFI	0.77	0.861 (0.015)	6.06	0.139	0.091	0.89
AGFI	0.63	0.778 (0.024)	6.17	0.222	0.148	0.81
CFI	0.91	0.907 (0.018)	-0.17	0.093	-0.003	1.00
RFI	0.73	0.821 (0.024)	3.79	0.179	0.091	0.89

Summary

In summary, the series of CFAs provided sufficient evidence of acceptable levels of psychometric properties. Table 5.8 displays the final items that survived the measurement purification process, together with the Cronbach alphas of the respective constructs. The discussion will now turn to the analysis of the hypothesized structural models starting in Section 5.3.2 below.

Table 5.8: Final Items and Reliabilities of the Constructs in the Main Models

Construct	Cronbach Alpha
Strategic Integration 1. This alliance with Firm X is expected to provide leadership in particular business areas. (INTEG1) 2. This alliance with Firm X is incorporated into your firm's strategic planning process. (INTEG2) 3. Your firm adequately provides the alliance with necessary resources. (INTEG3)	0.78
Cooperation Concerning your alliance with Firm X: 1. There is a sense of cooperation. (COOP1) 2. Your firm tries to exchange complete and accurate information to resolve conflicts. (COOP2) 3. Your firm and Firm X are willing to make cooperative changes to make the alliance/joint venture successful. (COOP3)	0.86
Coordination Concerning your alliance with Firm X: 1. The different job and work activities related to alliance tasks fit together very well. (COORD1) 2. Alliance-related activities are well sequenced/scheduled. (COORD2) 3. The routines of your firm and Firm X are well coordinated. (COORD3)	0.87
Knowledge Sharing 1. Managers from the alliance unit and managers from your firm meet in order to share knowledge. (SHARE1) 2. Managers from the alliance unit and managers from your firm phone to share knowledge. (SHARE2) 3. Managers from the alliance unit and managers from your firm e-mail to share knowledge. (SHARE3)	0.87

Table 5.8: (continued)

Construct	Cronbach Alpha
Alliance-Parent Interactions 1. Managers from the alliance unit and managers from your firm share recreational activities. (INX1) 2. Managers from the alliance unit and managers from your firm interact socially (beyond work-related). (INX2) 3. Managers from the alliance unit and managers from your firm maintain close interpersonal relationship. (INX3)	0.83
Personnel Transfers 1. There is job rotation between your firm and the alliance unit. (PSONTF1) 2. There is some personnel exchange between your firm and the alliance unit. (PSONTF2) 3. There is personnel promotion **from** the alliance **to** your firm. (PSONTF3)	0.85
Partner-to-Partner Knowledge Transfer 1. Your partner openly shares with your firm confidential information about product development management. (PPTF1) 2. Your partner openly shares with your firm confidential information about supply chain management. (PPTF2) 3. Your partner openly shares with your firm confidential information about customer relationship management. (PPTF3)	0.73
Alliance-to-Parent Knowledge Transfer Because of the knowledge learned from the alliance: 1. Your firm has greatly reduced its initial reliance or dependence on the alliance partner in the area of product development. (APTF1) 2. Your firm has greatly reduced its initial reliance or dependence on the alliance partner in the area of supply chain management. (APTF2) 3. Your firm has greatly reduced its initial reliance or dependence on the alliance partner in the area of customer relationship management. (APTF3)	0.76

Table 5.8: (continued)

Construct	Cronbach Alpha
Product Development Knowledge With respect to your firm's capability in **Product Development**: 1. The alliance with Firm X has helped your firm be aware of factors in product development. (KNOWPD1) 2. The alliance with Firm X has helped your firm somewhat control factors in product development. (KNOWPD2) 3. The alliance with Firm X has helped your firm use product development knowledge in new markets. (KNOWPD3)	0.86
Supply Chain Management Knowledge With respect to your firm's capability in **Supply Chain Management**: 1. The alliance with Firm X has helped your firm be aware of factors in supply chain management. (KNOWSC1) 2. The alliance with Firm X has helped your firm somewhat control factors in supply chain management. (KNOWSC2) 3. The alliance with Firm X has helped your firm use supply chain management in new markets. (KNOWSC3)	0.93
Customer Relationship Management Knowledge With respect to your firm's capability in **Customer Relationship Management**: 1. The alliance with Firm X has helped your firm be aware of factors in Customer Relationship Management. (KNOWCR1) 2. The alliance with Firm X has helped your firm somewhat control factors in customer relationship management. (KNOWCR2) 3. The alliance with Firm X has helped your firm use customer relationship management knowledge in new markets. (KNOWCR3)	0.91

Table 5.8: (continued)

Construct	
Product Development Innovation In regards to your alliance with Firm X: 1. Your firm has radically improved products. (INNOPD1) 2. Your firm achieves radical superior product value to make the competition irrelevant. (INNOPD2)	Correlation =0.84
Customer Relationship Management Innovation In regards to your alliance with Firm X: 1. Your firm increasingly thinks in terms of a total customer solution even if some existing customers will be lost. (INNOCR1) 2. Your firm has targeted buyers by willingly losing some existing customers. (INNOCR2)	Correlation =0.67
Supply Chain Management Innovation In regards to your alliance with Firm X: 1. Your firm has increasingly viewed forming alliances as a way to leverage capabilities. (INNOSC1) 2. Your firm's capabilities have been built by combining existing capabilities with the other firms' capabilities. (INNOSC2)	Correlation =0.71

5.3.2 Hypothesized Structural Models (Main Models)

The structural model analyses of the main models was divided into two parts: the hypothesis testing for (1) the relationships between marketing knowledge and its antecedents and (2) the relationship between marketing knowledge and marketing innovation. This decision was made due to the substantially superior model fits for the two separate CFA models as compared to the combined CFA model (both NFI for GFI and AGFI were substantially lower than 0.80). The structural model was tested along with the measurement model using the same bootstrapping procedures for parameter estimates and for model fit evaluation. The only modification was that the nine items comprising marketing knowledge were parceled into three variables corresponding to the

first order dimensions of the higher-order marketing knowledge construct. Similarly, the six items comprising marketing innovation were parceled into three variables corresponding to the first order dimensions of the higher-order marketing innovation construct.

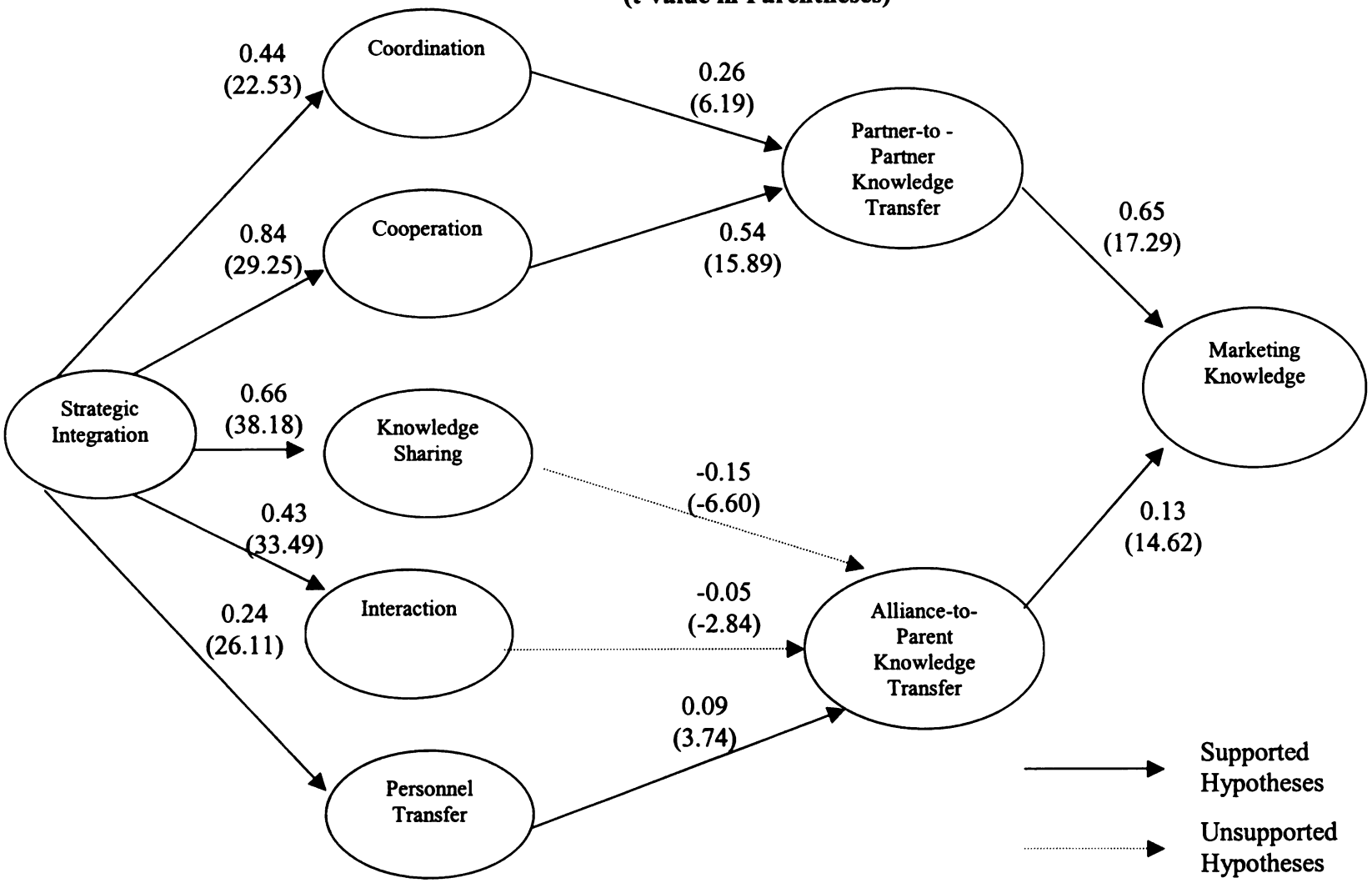
Relationships between Marketing Knowledge and its Antecedents

The hypothesized model stated that alliances that were integrated into the parent's strategic plan would have higher degrees of coordination, cooperation, knowledge sharing, social interaction and personnel transfer; these in turn would increase knowledge transfer and ultimately lead to incremental marketing knowledge. A structural model testing these hypotheses was specified. The NFI for GFI (reported in Table 5.9) approaches 0.80, indicating an acceptable model fit. The NFI for AGFI is much lower than that of GFI due to the complexity of the model. Results of the tests are summarized in Figure 5.6.

Table 5.9: Evaluation of Fit Indices: Structural Model for the Relationships Between Marketing Knowledge and its Antecedents

Fit Indices	Fit Indices From Original Sample Model (θ_s)	Average Fit Indices (θ) From Bootstrapping of Simulated Data (Standard Error)	BST	Less than Perfect Fit Due to Sampling Error	Less than Perfect Fit Due to Nonsampling Error	NFI (θ_s/θ)
GFI	0.61	0.777 (0.014)	11.93	0.223	0.167	0.79
AGFI	0.52	0.730 (0.017)	12.35	0.270	0.210	0.71
CFI	0.72	0.821 (0.021)	4.81	0.179	0.101	0.88
RFI	0.47	0.693 (0.021)	10.62	0.307	0.223	0.68

Figure 5.6: Parameter Estimates for the Relationships Between Marketing Knowledge and its Antecedents (t-value in Parentheses)



The results show that the more the alliance is integrated into the parent's strategic plan, the higher coordination, cooperation, knowledge sharing, social interaction and personnel transfer. Means of the bootstrap gamma estimates for the relationships from strategic integration to coordination, cooperation, knowledge sharing, interaction and personnel transfer were 0.44 (t=22.53), 0.84 (t=29.25), 0.66 (t=38.18), 0.43 (t=33.49) and 0.24 (t=26.11), respectively. This provides support for Hypotheses 1a through Hypothesis 1e.

The dissertation hypothesized that coordination and cooperation would be positively related to partner-to-partner knowledge transfer, whereas knowledge sharing, interaction and personnel transfer would be positively related to alliance-to-parent knowledge transfer. The results show that coordination and cooperation were positively related to partner-to-partner knowledge transfer, with means of the bootstrap beta estimates of 0.26 (t=6.19) and 0.54 (t=15.89), respectively. This provides support for Hypotheses 2a and 2b. However, knowledge sharing and interaction were negatively related to alliance-to-parent knowledge transfer, with means of the bootstrap beta estimates of -0.15 (t=-6.60) and -0.05 (t=-2.84), respectively. These significant but negative results contradicted to the hypothesized relationships and, thus, did not provide support for Hypotheses 3c and 3d. Personnel transfer, however, was positively related to alliance-to parent knowledge transfer: the mean of the bootstrap beta estimates of 0.09 (t=3.74) provided support for Hypothesis 3e.

Both transfer mechanisms (partner-to-partner and alliance-to-parent transfers) were found positively related to marketing knowledge. The means of the bootstrap beta estimates for the relationships from partner-to-partner knowledge transfer and alliance-to-

parent knowledge transfer to marketing knowledge were 0.65 (t=17.29) and 0.13 (t=14.62), respectively. These results provided support for Hypotheses 4a and 4b.

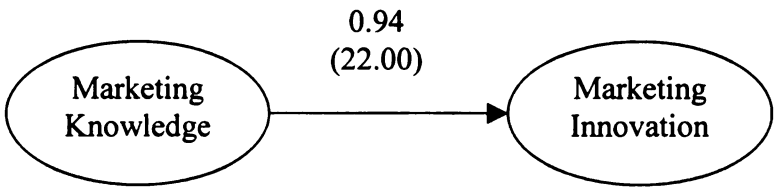
Relationships Between Marketing Knowledge and Marketing Innovation

The discussion will now turn to the structural model testing for the second part of main model: i.e., the relationship between marketing knowledge and marketing innovation. The results are in Table 5.10 and Figure 5.7. The results show a positive relationship between marketing knowledge and marketing innovation, with a mean of the bootstrap beta estimates of 0.94 (t=22.00), supporting Hypothesis 5. The NFI for GFI of this structural model demonstrated good model fit. However, it is surprising that NFI for AGFI is substantially lower than that of GFI, given that this is a relatively small and simple model. The only plausible explanation, drawn from observing the NFI results across the analysis in this dissertation, is that the simpler the model, the more sensitive the AGFI to nonsampling error. This conclusion is, of course, tentative and requires further investigation.

Table 5.10: Evaluation of Fit Indices: Structural Model for Relationship Between Marketing Knowledge and Marketing Innovation

Fit Indices	Fit Indices From Original Sample Model (θ_s)	Average Fit Indices (θ) From Bootstrapping of Simulated Data (Standard Error)	BST	Less than Perfect Fit Due to Sampling Error	Less than Perfect Fit Due to Nonsampling Error	NFI (θ_s/θ)
GFI	0.89	0.971 (0.012)	6.67	0.029	0.081	0.92
AGFI	0.71	0.923 (0.032)	6.56	0.077	0.213	0.77
CFI	0.72	0.953 (0.035)	6.66	0.047	0.233	0.76
RFI	0.36	0.839 (0.064)	7.48	0.161	0.479	0.43

Figure 5.7: Parameter Estimate for the Relationship Between Marketing Knowledge and Marketing Innovation (t-value in Parenthesis)



5.4 Moderation Models

This section describes measurement and structural model testing for Hypotheses 6 to 9. The measurement models are assessed in Section 5.4.1 and the hypothesis testing is discussed in Section 5.4.2.

5.4.1 Measurement Validation for Moderation Models

There are four moderating constructs proposed in the models: absorptive capacity, tacitness, trust, and cultural differences. Similar to the approach taken in the main model analysis, reliabilities from the original effective sample (N=50) were first evaluated with Cronbach alphas. Items with low loadings were discarded. Subsequently, the original effective sample was bootstrapped and the convergent validities and discriminant validities of the proposed constructs were evaluated through a series of confirmatory factor analysis (CFAs). Specifically, seven measurement models were tested as follows:

1) CFA for the moderating effects of tacitness on the relationships from coordination and cooperation to partner-to-partner knowledge transfer;

2) CFA for the moderating effects of absorptive capacity on the relationships from coordination and cooperation to partner-to-partner knowledge transfer;

3) CFA for the moderating effects of trust on the relationships from coordination and cooperation to partner-to-partner knowledge transfer;

4) CFA for the moderating effects of cultural difference on the relationships from coordination and cooperation to partner-to-partner knowledge transfer;

5) CFA for the moderating effects of tacitness on the relationships from knowledge sharing, interaction and personnel transfer to alliance-to-parent knowledge transfer;

6) CFA for the moderating effects of absorptive capacity on the relationships from knowledge sharing, interaction and personnel transfer to alliance-to-parent knowledge transfer; and

7) CFA for the moderating effect of absorptive capacity on the relationship from marketing knowledge to marketing innovation.

Since reliabilities of the main constructs were previously discussed in Section 5.3.1, this section discusses only the reliabilities of the moderators, followed by a discussion of discriminant and convergent validities of the above seven CFAs.

Reliability of Moderators

The following describes the reliabilities of the four moderators. The first moderating construct was tacitness. Tacitness measures the degree to which knowledge is difficult to teach and to put in writing. Initial analysis found three items loaded reliably on the tacitness construct (Cronbach alpha equal to 0.80).

The second moderating construct is absorptive capacity. The literature has approached this construct from two aspects: absorptive capacity as a function of prior related knowledge or as a function of common knowledge Two items measuring prior related knowledge were significantly correlated (Pearson's correlation 0.431). Even

though the correlation is relatively low, it is highly significant ($p<0.01$; two-tailed) and the two items are theoretically supported. Thus, they were used as the measurement items for absorptive capacity construct.

The third moderating construct was trust. Trust is defined as the perceived credibility and benevolence of an alliance partner. It was found that three items capturing both the perceived credibility and the benevolence aspects loaded on trust, with good reliability (Cronbach alpha equal to 0.83).

The last moderating construct was cultural difference. Cultural difference can be measured from (1) the cultural index, if the countries of origin of partner firms are known, and (2) the cultural similarity Likert scales. Since there were a large number of missing values for the partner "country of origin" question, this item was deleted from the analysis (if it were not deleted, more observations would be lost due to bootstrapping listwise deletion). Thus, only cultural similarity Likert scales were used to measure cultural difference between alliance partners. Three Likert scales reliably loaded on the same construct (Cronbach alpha equal to 0.79).

A summary of the initial reliabilities and analysis of the final items that were used for structural analysis can be found in Table 5.11. Following is the discussion for construct validity related to the CFAs for the moderation models.

Table 5.11: Final Items and Reliabilities for the Moderators

Construct	Reliability
Tacitness Concerning your alliance with Firm X: 1. There exists a useful manual describing marketing processes.* * 2. Marketing information and decision rules are stored in an electronic database.* * 3. Knowledge involved in the alliance is sufficiently explained to your firm in writing.* *	0.80
Absorptive Capacity 1. Before this alliance, your firm did a lot of market research. 2. The product/market of the alliance with Firm X is closely related to that of your firm.	0.43*
Trust Concerning your alliance with Firm X: 1. Your partner Firm X keeps promises it makes. 2. Your partner Firm X is trustworthy. 3. Your firm trusts Firm X to keep your firm's best interests in mind.	0.83
Cultural Differences 1. The national culture of Firm X greatly differs from your firm. 2. Cultural differences between your firm and Firm X inhibit effective communication. 3. Your partner Firm X behaves like your firm does. **	0.79

* Pearson Correlation; others are Cronbach alphas.

* * Reverse Scale

Discriminant and Convergent Validities of CFAs for Moderation Models

Discriminant and convergent validities of the CFAs for the moderation models are described below. As already stated, there are seven CFAs. These are described below and the results of the analyses are summarized in Table 5.12.

The first is the CFA for the moderating effects of tacitness on the relationships from coordination and cooperation to partner-to-partner knowledge transfer. In this CFA model, twelve items were modeled to load on four constructs (Tacitness, Coordination, Cooperation, Partner-to-Partner Knowledge Transfer). Average loadings from the bootstrap procedure were high (ranging from 0.79 to 2.51), with the exception of one item that had an unstandardized loading of 0.38. However, even this item (product development knowledge transfer) was highly significant ($p<0.01$; two-tailed). The confidence interval around the mean of the bootstrap sample correlation between any two latent constructs does not contain one, demonstrating good discriminant validity. NFI for both GFI and AGFI from the bootstrapping procedure for evaluating model fit (shown on Table 5.12) indicate a good model fit.

The second is the CFA for the moderating effects of absorptive capacity on the relationships from coordination and cooperation to partner-to-partner knowledge transfer. In this CFA model, eleven items were modeled to load on four constructs (Absorptive Capacity, Coordination, Cooperation, Partner-to-Partner Knowledge Transfer). All average loadings from the bootstrap procedure were high (ranging from 0.79 to 2.35) with the exception of product development knowledge transfer with an unstandardized loading of 0.40. All loadings were highly significant ($p<0.01$; two-tailed). The confidence interval around the mean of the bootstrap sample correlation between any two

latent constructs did not contain one, demonstrating good discriminant validity. NFI for both GFI and AGFI from the bootstrapping procedure for evaluating model fit (shown on Table 5.12) indicated a good model fit.

The third is the CFA for the moderating effects of trust on the relationships from coordination and cooperation to partner-to-partner knowledge transfer. In this CFA model, twelve items were modeled to load on four constructs (Trust, Coordination, Cooperation, Partner-to-Partner Knowledge Transfer). All average loadings from the bootstrap procedure were high (ranging from 0.79 to 2.35), with the exception of the product development knowledge transfer, which had unstandardized loading of 0.43. All loadings were highly significant ($p<0.01$; two-tailed). The confidence interval around the mean of the bootstrap sample correlation between any two latent constructs did not contain one, demonstrating good discriminant validity. NFI for both GFI and AGFI from the bootstrapping procedure for evaluating model fit (shown on Table 5.12) indicated an excellent model fit.

The fourth CFA was for the moderating effects of cultural difference on the relationships from coordination and cooperation to partner-to-partner knowledge transfer. In this CFA model, twelve items were modeled to load on four constructs (Cultural Difference, Coordination, Cooperation, Partner-to-Partner Knowledge Transfer). All average loadings from the bootstrap procedure were high (ranging from 0.78 to 2.74), with the exception of the product development knowledge transfer that had an unstandardized loading of 0.26. All loadings were highly significant ($p<0.01$; two-tailed). The confidence interval around the mean of the bootstrap sample correlation between any two latent constructs did not contain one, demonstrating good discriminant

validity. NFI for both GFI and AGFI from the bootstrapping procedure for evaluating model fit (shown on Table 5.12) indicated an excellent model fit.

The fifth CFA was for the moderating effects of tacitness on the relationships from knowledge sharing, interaction and personnel transfer to alliance-to-parent knowledge transfer. In this CFA model, fifteen items were modeled to load on five constructs (Tacitness, Knowledge Sharing, Interaction, Personnel Transfer and Alliance-to-Parent Knowledge Transfer). All average loadings from the bootstrap procedure are high (ranging from 0.84 to 1.77), with the exception of product development knowledge transfer, which had an unstandardized loading of 0.44. All loadings were highly significant ($p<0.01$; two-tailed). The confidence interval around the mean of the bootstrap sample correlation between any two latent constructs did not contain one, demonstrating good discriminant validity. NFI for both GFI and AGFI from the bootstrapping procedure for evaluating model fit (shown on Table 5.12) indicated a good model fit.

The sixth CFA was for the moderating effects of absorptive capacity on the relationships from knowledge sharing, interaction and personnel transfer to alliance-to-parent knowledge transfer. Fourteen items were modeled to load on five constructs (Absorptive Capacity, Knowledge Sharing, Interaction, Personnel Transfer and Alliance-to-Parent Knowledge Transfer). All average loadings from the bootstrap procedure were high, ranging from 0.58 (for product development knowledge transfer) to 1.77. All were significant ($p<0.01$; two-tailed). The confidence interval around the mean of the bootstrap sample correlation between any two latent constructs did not contain one, demonstrating good discriminant validity. NFI for both GFI and AGFI from the

bootstrapping procedure for evaluating model fit indicated a good model fit (see Table 5.12).

Finally, the seventh CFA was for the moderating effect of absorptive capacity on the relationship from marketing knowledge to marketing innovation. Seventeen items were modeled to load on seven constructs (three Marketing Knowledge first order constructs, three Marketing Innovation first order constructs, and Absorptive Capacity). All average loadings from the bootstrap procedure were high (ranging from 0.76 to 2.15) and significant ($p<0.01$; two-tailed). The confidence interval around the mean of the bootstrap sample correlation between any two latent constructs did not contain one, demonstrating good discriminant validity. NFI for both GFI and AGFI from the bootstrapping procedure for evaluating model fit indicated a good model fit (Table 5.12).

In summary, all CFAs for the moderation models demonstrated good model fit and good discriminant validity. Construct loadings were highly significant. Unstandardized construct loadings were high, with the exception of two items. Reliabilities were in the acceptable range. The discussion will now turn to the structural model analysis (Section 5.4.2).

Table 5.12: Evaluation of Fit Indices: CFAs for Moderation Models

Fit Indices	Fit Indices From Original Sample Model (θ_s)	Average Fit Indices (θ) From Bootstrapping of Simulated Data (Standard Error)	BST	Less than Perfect Fit Due to Sampling Error	Less than Perfect Fit Due to Nonsampling Error	NFI (θ_s/θ)
1) CFA for the moderating effects of tacitness on the relationships from coordination and cooperation to partner-to-partner knowledge transfer.						
GFI	0.82	0.889 (0.016)	4.31	0.111	0.069	0.92
AGFI	0.71	0.820 (0.026)	4.23	0.180	0.110	0.87
CFI	0.94	0.906 (0.019)	-1.79	0.094	-0.034	1.04
RFI	0.76	0.820 (0.026)	2.31	0.180	0.060	0.93
2) CFA for the moderating effects of absorptive capacity on the relationships from coordination and cooperation to partner-to-partner knowledge transfer.						
GFI	0.85	0.905 (0.016)	3.44	0.095	0.055	0.94
AGFI	0.74	0.835 (0.027)	3.52	0.165	0.095	0.89
CFI	0.92	0.925 (0.019)	0.26	0.075	0.005	0.99
RFI	0.72	0.837 (0.024)	4.88	0.163	0.117	0.86
3) CFA for the moderating effects of trust on the relationships from coordination and cooperation to partner-to-partner knowledge transfer.						
GFI	0.84	0.866 (0.017)	1.53	0.134	0.026	0.97
AGFI	0.74	0.783 (0.028)	1.54	0.217	0.043	0.95
CFI	0.88	0.911 (0.022)	1.41	0.089	0.031	0.97
RFI	0.68	0.811 (0.028)	4.68	0.189	0.131	0.84
4) CFA for the moderating effects of cultural difference on the relationships from coordination and cooperation to partner-to-partner knowledge transfer.						
GFI	0.82	0.890 (0.015)	4.67	0.110	0.070	0.92
AGFI	0.70	0.821 (0.025)	4.84	0.179	0.121	0.85
CFI	0.92	0.927 (0.022)	0.32	0.073	0.007	0.99
RFI	0.71	0.832 (0.030)	4.07	0.168	0.122	0.85
5) CFA for the moderating effects of tacitness on the relationships from knowledge sharing, interaction and personnel transfer to alliance-to-parent knowledge transfer.						
GFI	0.77	0.856 (0.016)	5.38	0.144	0.086	0.90
AGFI	0.66	0.784 (0.024)	5.17	0.216	0.124	0.84
CFI	0.87	0.879 (0.025)	0.36	0.121	0.009	0.99
RFI	0.65	0.766 (0.031)	3.74	0.234	0.116	0.85

Table 5.12: (continued)

Fit Indices	Fit Indices From Original Sample Model (θ_s)	Average Fit Indices (θ) From Bootstrapping of Simulated Data (Standard Error)	BST	Less than Perfect Fit Due to Sampling Error	Less than Perfect Fit Due to Nonsampling Error	NFI (θ_s/θ)
6) CFA for the moderating effects of absorptive capacity on the relationships from knowledge sharing, interaction and personnel transfer to alliance-to-parent knowledge transfer.						
GFI	0.81	0.881 (0.015)	4.73	0.119	0.071	0.92
AGFI	0.70	0.814 (0.023)	4.96	0.186	0.114	0.86
CFI	0.89	0.912 (0.022)	1.00	0.088	0.022	0.98
RFI	0.67	0.804 (0.027)	4.96	0.196	0.134	0.83
7) CFA for the moderating effect of absorptive capacity on the relationship from marketing knowledge to marketing innovation.						
GFI	0.75	0.842 (0.015)	6.13	0.158	0.092	0.89
AGFI	0.61	0.753 (0.024)	5.60	0.247	0.143	0.81
CFI	0.88	0.907 (0.015)	1.80	0.093	0.027	0.97
RFI	0.67	0.810 (0.020)	7.00	0.190	0.140	0.83

5.4.2 Hypothesized Structural Models (Moderation Models)

This section discusses structural models that examine the moderating effects of four moderators: tacitness, absorptive capacity, trust and cultural difference. More specifically, interest lies in whether the relationships between constructs change in the presence of high versus low levels of specific moderators. Traditionally, sub-group analysis is used to answer this type of research question. However, since the bootstrap procedure was used to increase the power of the tests, sub-group analysis cannot be performed. This is because sub-group analysis requires Chi-square difference tests but, unfortunately, the bootstrap distribution does not follow the usual central Chi-square distribution (Bollen and Stine 1993), and thus the traditional Chi-square difference tests cannot be used. As an alternative, interaction analysis was used to estimate the

parameters of the moderation models. Interaction analysis involves multiplication of the independent variable and the moderator; the multiplicative interaction term and the independent variable then enter a regression model.

Table 5.13 shows the seven moderation models that correspond to the seven CFAs described in Section 5.4.1. All measurement items underlying each construct were summed into one variable. To estimate and test the parameters of the first six moderation models, the Seemingly Unrelated Regression (Zellner 1962) option available in SAS® PROC SYSLIN was used. Seemingly Unrelated Regression (SUR) is a method to estimate the parameters of a set of regression equations when the dependent variable is shared by more than one independent variable. To estimate and test the parameters of the last model (Model 7), ordinary regression was used. All the models were run from one set of bootstrap sample with sample size 150.

Table 5.13: Moderation Models

Dependent Variable: Partner-to-Partner Knowledge Transfer (PPTF)
Model 1(Moderator = Tacitness): $PPTF = \beta_{11}(Coordination) + \beta_{12}(Coordination * Tacitness)$ $PPTF = \beta_{13}(Cooperation) + \beta_{14}(Cooperation * Tacitness)$
Model 2 (Moderator = Absorptive Capacity): $PPTF = \beta_{21}(Coordination) + \beta_{22}(Coordination * Absorptive\ capacity)$ $PPTF = \beta_{23}(Cooperation) + \beta_{24}(Cooperation * Absorptive\ capacity\ )$
Model 3 (Moderator = Trust): $PPTF = \beta_{31}(Coordination) + \beta_{32}(Coordination * Trust)$ $PPTF = \beta_{33}(Cooperation) + \beta_{34}(Cooperation * Trust)$
Model 4 (Moderator = Cultural Difference): $PPTF = \beta_{41}(Coordination) + \beta_{42}(Coordination * Cultural\ Difference)$ $PPTF = \beta_{43}(Cooperation) + \beta_{44}(Cooperation * Cultural\ Difference)$
Dependent Variable: Alliance-to-Parent Knowledge Transfer (APTF)
Model 5 (Moderator = Tacitness): $APTF = \beta_{51}(Knowledge\ Sharing) + \beta_{52}(Knowledge\ Sharing * Tacitness)$ $APTF = \beta_{53}(Interaction) + \beta_{54}(Interaction * Tacitness)$ $APTF = \beta_{55}(Personnel\ Transfer) + \beta_{56}(Personnel\ Transfer * Tacitness)$
Model 6 (Moderator = Absorptive Capacity): $APTF = \beta_{61}(Knowledge\ Sharing) + \beta_{62}(Knowledge\ Sharing * Absorptive\ Capacity)$ $APTF = \beta_{63}(Interaction) + \beta_{64}(Interaction * Absorptive\ Capacity\ )$ $APTF = \beta_{65}(Personnel\ Transfer) + \beta_{66}(Personnel\ Transfer * Absorptive\ Capacity)$
Dependent Variable: Marketing Innovation (INNO)
Model 7 (Moderator = Absorptive Capacity): $INNO = \beta_{71}(Marketing\ Knowledge) + \beta_{72}(Marketing\ Knowledge * Absorptive\ Capacity)$

The analysis results (shown in Table 5.14) demonstrated that five beta estimates were statistically significant: β_{22}, β_{24}, β_{32}, β_{34} and β_{72}. Respectively, β_{22} (0.03, t=1.66, $p<0.05$; one-tailed test) and β_{24} (0.02, t=1.72, $p<0.05$; one-tailed test) were the unstandardized regression coefficients that correspond to the moderating effects of absorptive capacity on the relationships from coordination and cooperation to partner-to-partner knowledge transfer. The significant results provided support for Hypotheses 7a and 7b.

Table 5.14: Moderator Parameter Estimates

Hypothesis	Model	Moderator Parameter	Moderator Parameter Estimates	t-value
H6a	1	β_{12}	0.01	0.84
H6b		β_{14}	0.01	1.00
H7a	2	β_{22}	0.03	1.66*
H7b		β_{24}	0.02	1.72*
H8a	3	β_{32}	0.07	3.51**
H8b		β_{34}	0.05	3.22**
H9a	4	β_{42}	0.02	0.18
H9b		β_{44}	0.01	0.35
H6c	5	β_{52}	0.00	0.21
H6d		β_{54}	0.00	-0.07
H6e		β_{56}	0.00	0.03
H7c	6	β_{62}	0.00	0.16
H7d		β_{64}	0.00	-0.03
H7e		β_{66}	0.00	0.02
H7f	7	β_{72}	-0.06	-3.15**

* significant at $p < 0.05$ (one-tailed test)
** significant at $p < 0.01$ (one-tailed test)

Similarly, β_{32}, (0.07, t=3.51, p<0.01; one-tailed test) and β_{34} (0.05, t=3.22, p<0.01; one-tailed test) are unstandardized regression coefficients; they correspond to the moderating effects of trust on the relationships from coordination and cooperation to partner-to-partner knowledge transfer. These results therefore supported Hypotheses 8a and 8b.

Finally, β_{72} represents the moderating effect of absorptive capacity on the relationship between marketing knowledge and marketing innovation. It was found highly significant (β_{72} = -0.06, t= -3.15, p<0.01; one-tailed test) but its sign was negative when a positive relationship was hypothesized. The result therefore did not provide support for Hypothesis 7f. This was the last model test conducted in Part 2 of the dissertation.

5.5 Summary

The analyses for Part 2 of the dissertation are now complete. Part 2 of the dissertation dealt with models analyzed using survey data. Measurement models and structural models were examined, and formal hypotheses were tested. The formal hypotheses that were developed in Chapter 3 are restated in Table 5.15, and the results of hypothesis testing are summarized in the right hand column. The next chapter, Chapter 6, discusses all the results in detail.

Table 5.15: Summary of Hypothesis Testing Results

Hypothesis	Result
Hypothesis 1: Parent strategic integration leads to coordination (H1a) and cooperation (H1b) between partners. Parent strategic integration also leads to knowledge sharing (H1c), interaction (H1d), and personnel transfer (H1e) between the joint venture and parent.	Supported
Hypothesis 2a: Coordination increases the level of partner-to-partner marketing knowledge transfer.	Supported
Hypothesis 2b: Cooperation increases the level of partner-to-partner marketing knowledge transfer.	Supported
Hypothesis 3a: Marketing knowledge sharing from alliance to its parent increases the level of alliance-to-parent marketing knowledge transfer.	Not Supported
Hypothesis 3b: Interaction between the alliance and its parent increases the level of alliance-to-parent marketing knowledge transfer.	Not Supported
Hypothesis 3c: Personnel transfer between the alliance and its parent increases the level of alliance-to-parent marketing knowledge transfer.	Supported
Hypothesis 4a: Partner-to-partner marketing knowledge transfer will lead to enhanced marketing knowledge in the partner firm.	Supported
Hypothesis 4b: Alliance-to-parent marketing knowledge transfer will lead to enhanced marketing knowledge in the partner firm.	Supported
Hypothesis 5: The more marketing knowledge a firm acquires from their business partners, the higher the firm's marketing innovation.	Supported
Hypothesis 6a-b: If the level of tacitness is low, then the positive relationships from coordination (H6a) and cooperation (H6b) to partner-to-partner knowledge transfer will be stronger than when the level of tacitness is high.	Not Supported
Hypothesis 6c-e: If the level of tacitness is low, then the positive relationships from knowledge sharing (H6c), interaction (H6d), and personnel transfer (H6e) to alliance-to-parent knowledge transfer will be stronger than when the level of tacitness is high.	Not Supported

Table 5.15: (continued)

Hypothesis	Result
Hypothesis 7a-b: If the level of absorptive capacity is high, then the positive relationships from coordination (H7a) and cooperation (H7b) to partner-to-partner knowledge transfer will be stronger than when the level of absorptive capacity is low.	Supported
Hypothesis 7c-e: If the level of absorptive capacity is high, then the positive relationships from knowledge sharing (H7c), interaction (H7d) and personnel transfer (H7e) to alliance-to-parent knowledge transfer will be stronger than when the level of absorptive capacity is low.	Not Supported
Hypothesis 7f: If the level of absorptive capacity is high, then the positive relationship between marketing knowledge and marketing innovation will be stronger than when the level of absorptive capacity is low.	Not Supported
Hypothesis 8: If the level of trust is high, then the positive relationships from coordination (H8a) and cooperation (H8b) to partner-to-partner knowledge transfer will be stronger than when the level of trust is low.	Supported
Hypothesis 9: If the level of cultural distance is low, then the positive relationships from coordination (H9a) and cooperation (H9b) to partner-to-partner knowledge transfer will be stronger than when the level of cultural distance is high.	Not Supported

CHAPTER 6

DISCUSSION OF RESULTS, LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Chapter 6 discusses the results from Part 1 (Chapter 2) and Part 2 (Chapter 5). The research questions and objectives of Part 1 were to: (1) indirectly assess the impact of knowledge acquisition, through alliance formation, on shareholder value; and (2) explore the effects of moderating factors on shareholder value creation. From a managerial perspective, the research questions and objectives of Part 2 were to: (1) re-conceptualize the marketing knowledge construct; (2) re-conceptualize the marketing innovation construct; (3) examine marketing knowledge transfer among business alliance and joint venture partners; and (4) examine the impact of key moderating factors on the process of knowledge transfer. The discussions of the results in this chapter thus entail these research objectives. However, since Part 1 results were already discussed separately in Chapter 2 (see Section 2.5), they are only discussed here again in light of Part 2 results.

The remaining of this chapter is organized as follows. Section 6.1 is divided into four parts. Section 6.1.1 discusses marketing knowledge from *both* shareholder and managerial perspectives and focuses on research question 1 of Parts 1 and 2. Section 6.1.2 and 6.1.3 discuss marketing innovation and the mechanisms of knowledge transfer, focusing on research questions 2 and 3 of Part 2. Since these two research questions were studied only in Part 2, the discussion of the results will only cover the managerial perspective. Section 6.1.4 discusses moderation of the knowledge transfer process and

involves research question 2 of Part 1 and research question 4 of Part 2. Finally, Section 6.2 discusses the limitations of the dissertation and additional directions for future research.

6.1 Discussion of the Results

6.1.1 Marketing Knowledge

Traditionally, marketing knowledge has been conceptualized as market information, where more information is equated to more knowledge. The dissertation assessed marketing knowledge as the extent to which firms actually understand their marketing tasks in three marketing domains: Product Development, Customer Relationship Management and Supply Chain Management. This reconceptualization suggests that the marketing knowledge goes beyond market information and is fundamentally based on how to evaluate and compare levels of cognitive understanding.

The results indicated that the reconceptualization of marketing knowledge is warranted. The marketing knowledge construct proposed in this dissertation taps *awareness* of the ingredients needed to achieve business success, the ability to *control* the business outcomes, and the capability to *implement* the knowledge in new business areas. This suggests that the marketing knowledge construct is distinct from information and that it can be captured independent of information level or incremental physical investment. However, future research should investigate the relationship between marketing knowledge embedded in physical investments (such as the firm's information level, information system, or technology adoption) and marketing knowledge captured in the firm's cognitive understanding.

The findings supported the contention that core marketing tasks involve three business processes: product development management (PDM), supply chain management (SCM) and customer relationship management (CRM). As Srivastava, Shervani and Fahey (1999) suggest, these processes emphasize customer value creation through the improvement of input acquisition and output transformation, the establishment of relationships to external market entities especially channel members and end users, and the achievement of the development of new customer solutions. The results also suggested that while marketing knowledge is one entity, it possesses three specializations that can be independently assessed. A direction for future research could be to further develop cognitive-based knowledge measurements in each specialized area of marketing.

Like other business resources, one ultimate goal of marketing knowledge is to generate financial outcomes. The dissertation evaluated the impact of knowledge acquisition through alliance formation on financial performance in terms of shareholder value creation, as measured by cumulative abnormal return (CARs). The results seem to indicate that, overall, there is positive shareholder value creation associated with the announcement of a firm's knowledge acquisition through alliances. This supports Nonaka's (1994) assertion that knowledge is a core capability that creates value in firms. Nonetheless, further investigation (to be discussed in Section 6.1.4) indicated that the contention that knowledge acquisition through alliances is related to positive shareholder value creation holds only under certain conditions (such as low cultural difference between partners). This opens new ground for future research in the specification of the business or environmental conditions under which marketing knowledge can be best explored and exploited.

6.1.2 Marketing Innovation

Marketing innovation is commonly conceived as a tangible asset in the form of inventions or technology adoption. Innovation is also sometime conceived as the firm's adaptability and creativity. The dissertation reconceptualizes marketing innovation as part of strategy innovation that involves primarily creating new value for customers, undermining competitors, and producing new wealth for all stakeholders (Kim and Mauborgne 1999). From the strategy innovation perspective, the dissertation proposes that firms can realize marketing innovation by achieving new product success, by delivering total customer solutions to newly uncovered demand, and by building core capabilities through business networking.

The results supported marketing innovation as strategy innovation. The dissertation found that marketing innovation covers not only the extent to which firms radically improve their products, but also the extent to which firms dutifully target non-existing demand or customers through demonstrating a willingness to lose some existing customers. Additionally, marketing innovation involves the idea of building a firm's capabilities through inter-firm collaboration. The results thus supported the conceptualization of marketing innovation in the PDM, SCM, and CRM domains and suggested that marketing innovation goes beyond product inventions. Indeed, marketing innovation can occur in any of the three marketing domains.

The findings point to interesting future research in the field of marketing strategy. Marketing practitioners are accustomed to starting their strategic planning by considering their strengths and weaknesses. The marketing innovation construct proposed in this dissertation, on the other hand, concentrates on new demand and focuses on what firms

do *not* have, regardless of the current industry condition. This suggests a future research direction that may change the way marketing planning is conducted. However, additional research is required to investigate the ramifications of this conceptualization of marketing innovation on the firm's long-term financial performance.

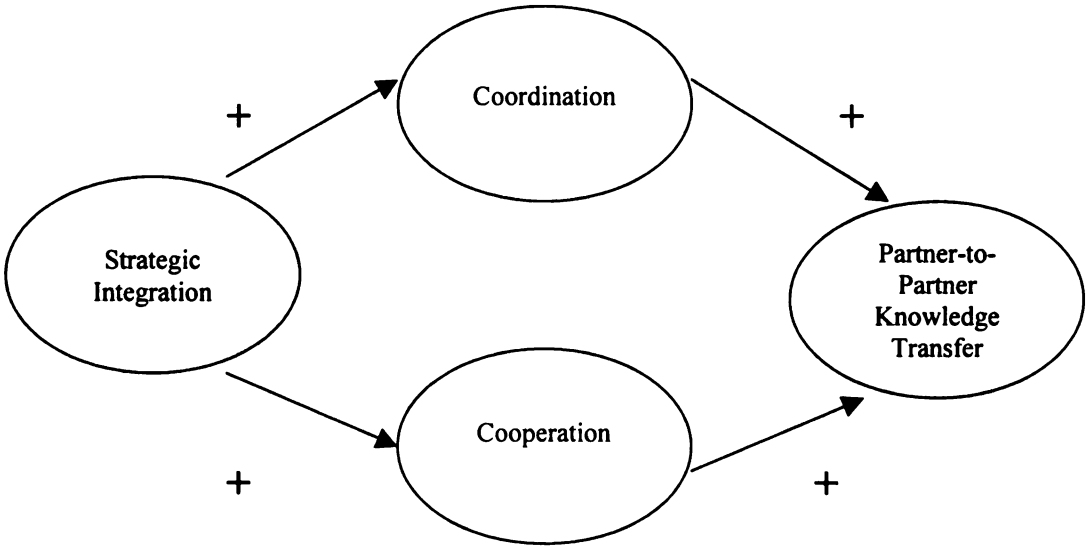
6.1.3 Mechanisms of Knowledge Transfer

The dissertation proposed that firms can enhance their marketing knowledge and marketing innovation by transferring marketing knowledge. The dissertation examined the relationship between marketing knowledge and marketing innovation and investigated antecedents of marketing knowledge arising from two main categories of transferring mechanisms: transfers between partners (partner-to-partner knowledge transfer) and transfers between the alliance and parent (alliance-to-parent knowledge transfer). Additionally, the dissertation examined the indirect effects of strategic integration on (1) partner-to-partner knowledge transfer through coordination and cooperation between partners, and (2) alliance-to-parent knowledge transfer through knowledge sharing, interaction, and personnel transfer.

The results supported the contention that strategic integration is positively related to coordination and cooperation between alliance partners, and hence to partner-to-partner knowledge transfer. In Chapter 3, strategic integration was defined as the extent to which the alliance strategy is linked with or incorporated into the parent firm's strategy. The construct taps the degree to which the alliance provides the parent leadership in particular business area, receives necessary resources from its parent and is incorporated into the parent's strategic planning.

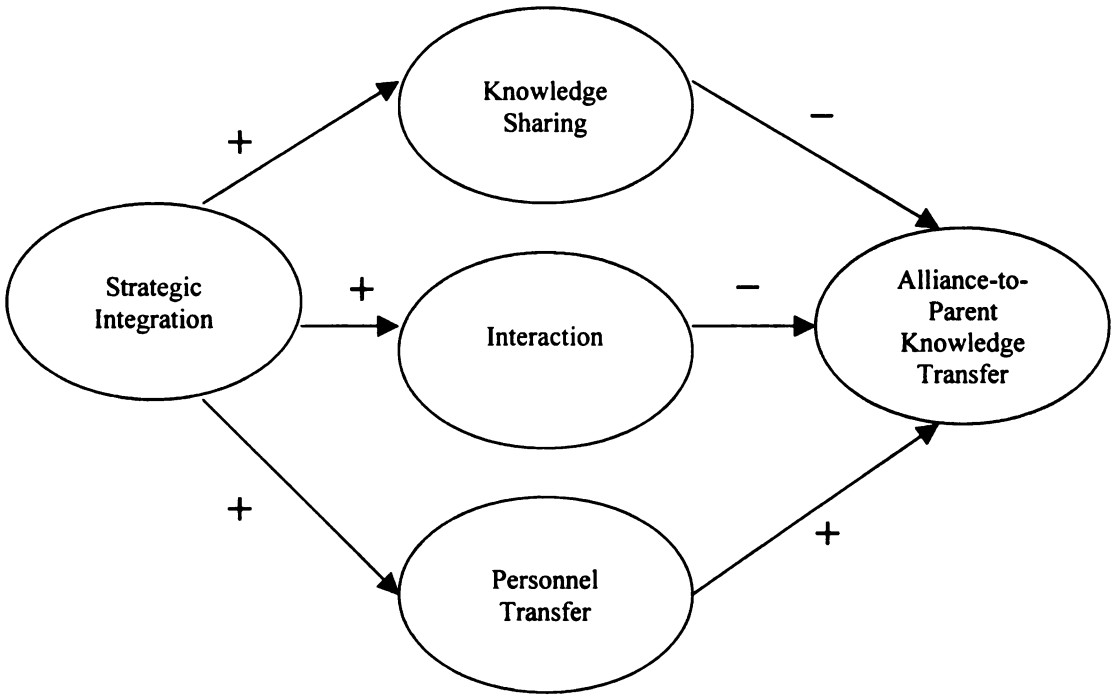
As shown in Figure 6.1, the findings indicated that a parent firm's involvement with its alliance by means of integrating it into the firm's strategy fosters a sense of cooperation between partners. Strategic integration promotes the exchange of complete and accurate information and encourages cooperative changes that make alliances successful. This in turn results in greater knowledge transfer between alliance partners. Additionally, strategic integration encourages sequencing and scheduling of alliance activities, which make routines of alliance-related tasks well coordinated, and in turn enhances knowledge transfer. Thus, both cooperation and coordination between partners are vital for transfer of knowledge. The dissertation therefore highlights the importance of coordination, which is a relatively understudied construct in marketing, on the knowledge transfer process. As Grant (1996) contends, even in the presence of high cooperation, coordination is not a trivial issue for knowledge transfer.

Figure 6.1: Strategic Integration, Coordination, Cooperation, and Partner-to-Partner Knowledge Transfer



Next, the dissertation examined the effects of strategic integration on alliance-to-parent knowledge transfer through knowledge sharing, social interaction and personnel transfer. As shown in Figure 6.2, the results indicated that, while the relationships from strategic integration to knowledge sharing, interaction and personnel transfer were positive, the relationships from knowledge sharing and interaction to alliance-to-parent knowledge transfer were negative. Only the relationship between personnel transfer and alliance-to-parent knowledge transfer was positive. These results indicated that alliances that provide parent firms with strategic value greatly influence selected firm behaviors. However, within the context of knowledge transfer to parent, such behaviors may not be beneficial to the parent firms. The results thus underscore the importance of managerial directions in determining firms' behaviors that can subsequently affect transfer of knowledge from their alliance partners.

Figure 6.2: Strategic Integration, Knowledge Sharing, Interaction, and Alliance-to-Parent Knowledge Transfer



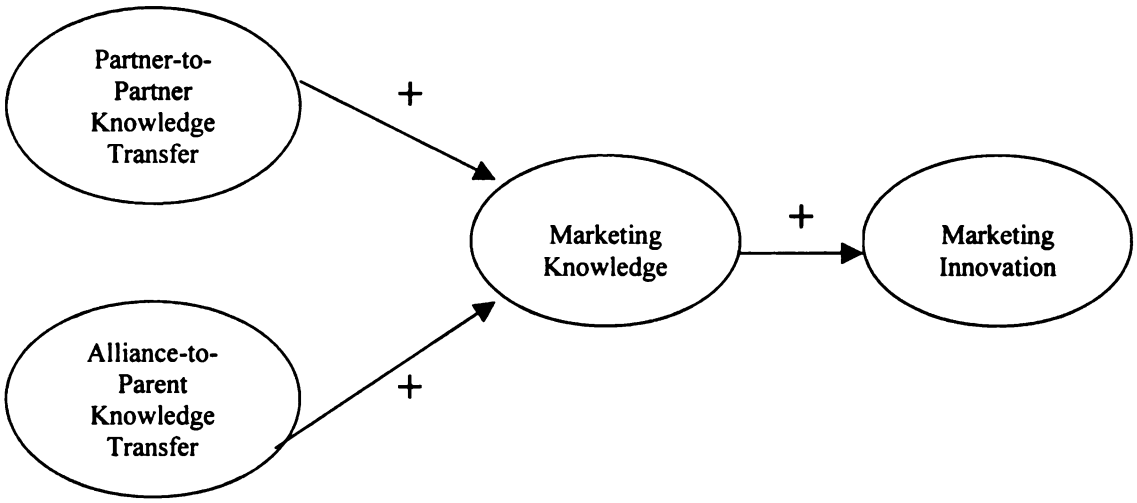
The negative effects of knowledge sharing and social interaction on alliance-to-knowledge transfer were unexpected given that previous research suggested the two mechanisms are keys for knowledge transfer across business partners (Inkpen and Dinur, 1998). One possible explanation for this counterintuitive finding is that knowledge sharing and social interaction are key drivers for knowledge transfer only when knowledge comes from external sources. As Yli-Renko, Autio and Sapienza (2001) conclude, from their study on knowledge transfer from firms' customers, "social capital facilitates *external* knowledge acquisition". Alliance-to-parent knowledge transfer, however, may be more internal in nature and extends beyond the transfer of information to the partner. It depicts how much a parent firm has successfully learned from its alliance partner through capturing the extent to which the firm can become more independent and less reliant on its partner. While partner-to-partner knowledge transfer has been extensively studied, alliance-to-parent knowledge transfer has not gained much attention from researchers. The results thus call for further investigation in this area.

The last strategic integration effect on alliance-to-parent knowledge transfer is through personnel transfer. The results suggested that strategic integration fosters job rotation, personnel exchange, and personnel promotion from the alliance to the parent. These in turn resulted in greater transfer of knowledge to the parent. The findings supported the claim that job rotation helps members of an organization understand multiple perspectives of the business and makes organizational knowledge more fluid and easier to put into practice (Nonaka 1994).

Turning to the relationships from each of the knowledge transfer constructs to marketing knowledge (shown in Figure 6.3), the results suggested that both partner-to-

partner knowledge transfer and alliance-to-parent knowledge transfer positively affect marketing knowledge. The results supported the contention that knowledge can be moved from a source of knowledge to recipient through a discrete event (i.e., alliance formation in this context). As Szulanski (1996) asserts, "the word 'transfer' is used rather than diffusion to emphasize that the movement of knowledge within the organization is a distinct experience, not a gradual process of dissemination". The findings also supported the conventional wisdom that views an alliance as a vehicle to learn since it enhances the firm's marketing knowledge.

Figure 6.3: Knowledge Transfers and Marketing Knowledge



The results in Figure 6.3 also indicated that marketing knowledge is positively related to marketing innovation. The positive relationship highlights Glazer's (1991) conceptualization of marketing knowledge as a strategic asset since it demonstrates that marketing knowledge is associated positively with the ability to achieve radical superior product innovation, the potential to uncover new demands and the capability to build competencies through collaboration with other firms. This finding also provided an interesting insight into the sources of strategy innovation. As Hamel (1998) argues,

while strategy innovation requires creativity and initiative to uncover new demand, it is derived from the right set of preconditions. In the context of the proposed model, marketing innovation is one strategy innovation that can be enhanced by setting up the right set of prerequisites (namely, e.g., marketing knowledge). Additional research is required to further investigate factors affecting the relationship between marketing knowledge and marketing innovation.

Although not hypothesized in the dissertation, it is interesting to contrast the direct effect of partner-to-partner knowledge transfer on marketing innovation with its indirect effect through marketing knowledge. Figure 6.4 shows the part of the model that captures the direct versus indirect effects of knowledge transfer constructs on marketing innovation. While the positive indirect effect of partner-to-partner knowledge transfer on marketing innovation was positive, its direct effect was negative. This result supported the differentiation of information (as embedded in partner-to-partner knowledge transfer) from knowledge. Information is merely a raw material that needs transformation into knowledge before it can be used as strategic asset to generate economic rent.

Figure 6.4: The Direct and Indirect Effects of Knowledge Transfers on Marketing Innovation (t-value in Parentheses)

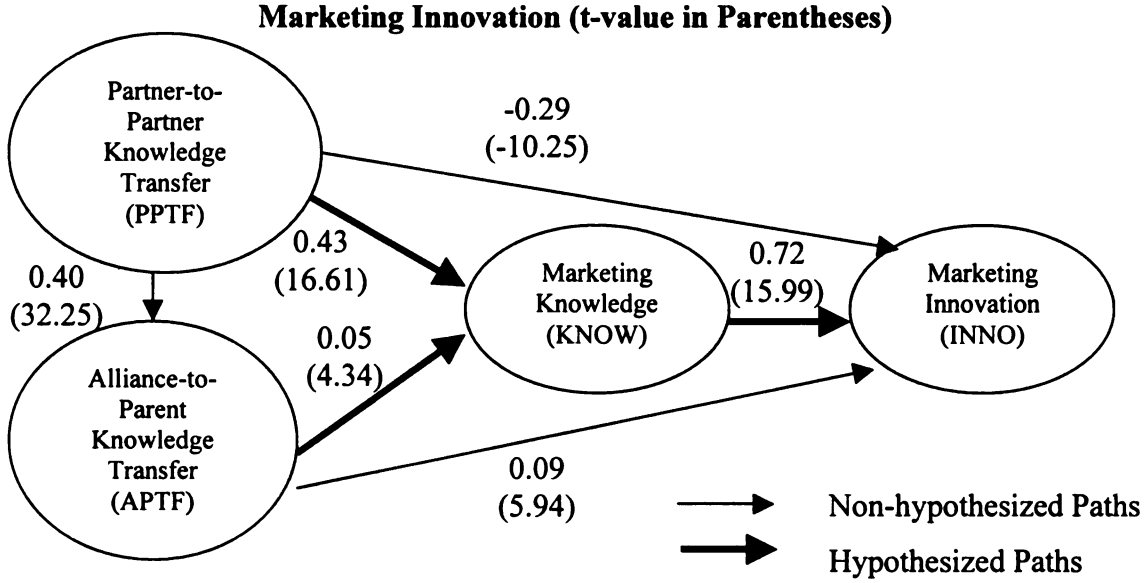


Figure 6.4 also shows the (non-hypothesized) indirect effect of partner-to-partner knowledge transfer on marketing knowledge and/or marketing innovation through alliance-to-parent knowledge transfer. The results indicate that both indirect paths are positive. However, the total effect of the indirect path PPTF → APTF →KNOW→INNO (0.40+0.05+0.72=1.17) is greater than the total effect of the indirect path PPTF → APTF →INNO (0.40+0.09=0.49). The dissertation's contention concerning the importance of marketing knowledge as a precursor of marketing innovation is thus warranted.

In summary, alliances that are more integrated strategically to parent firms are more likely to coordinate and cooperate with their partners. This in turn facilitates partner-to-partner knowledge transfer, which subsequently increases marketing knowledge and hence marketing innovation. Similarly, alliances that are incorporated into the parent firm's strategic planning are more likely to transfer knowledge to their parent through personnel rotation and promotion. This alliance-to-parent knowledge transfer is also positively associated with marketing knowledge and marketing innovation.

6.1.4 Moderation of Knowledge Transfer

Having discussed mechanisms of knowledge transfer that lead to firm's marketing knowledge and marketing innovation, the discussion will now turn to the moderation model of knowledge transfer. As discussed in Chapter 3, there were four moderators organized into two sets in this dissertation. The first set, knowledge related moderators, consisted of tacitness and absorptive capacity. The second set, partner related moderators, contained trust and cultural difference. To facilitate the discussion, the hypothesized moderating effects are summarized in Table 6.1.

Table 6.1: Summary of Hypothesized Moderating Effects

Group	Hypothesized Relationships	Moderators
1	Coordination → Partner-to-Partner Knowledge Transfer Cooperation → Partner-to-Partner Knowledge Transfer	Tacitness Absorptive Capacity Trust Cultural Difference
2	Knowledge Sharing →Alliance-to-Parent Knowledge Transfer Interaction →Alliance-to-Parent Knowledge Transfer Personnel Transfer →Alliance-to-Parent Knowledge Transfer	Tacitness Absorptive Capacity
3	Marketing Knowledge → Marketing Innovation	Absorptive Capacity

The dissertation hypothesized that the relationships from cooperation and coordination to partner-to-partner knowledge transfer would be stronger if tacitness (defined as the degree to which knowledge is difficult to teach or to put in writing) was low. Similarly, the dissertation proposed that the relationships from knowledge sharing, social interaction and personnel transfer to alliance-to-parent knowledge transfer would be stronger if the level of tacitness was low. The results, however, did not support the proposed moderating effects of tacitness on the relationships between these learning mechanisms and knowledge transfer.

The null results are unanticipated given that the extant literature has proposed tacitness as one of the key factors affecting knowledge transfer (Nonaka 1994; Inkpen and Dinur 1998) and this has been supported by empirical evidence (Kogut and Zander 1993; Szulanski 1996). A possible explanation is that tacitness might have a direct negative effect on knowledge transfer, which would make it a mediating factor on relationships between learning mechanisms and knowledge transfer, rather than a moderating factor. This explanation is in accordance with Simonin (1999b) who conceptualizes tacitness as one of the factors underlying the "ambiguity" of knowledge.

Ambiguity, broadly capturing transferability of knowledge, subsequently has a direct negative effect on knowledge transfer.

The mediating role of tacitness on the relationship between learning mechanisms and knowledge transfer (if supported by future research) would call for a reconceptualization of tacitness. Previous literature has conceptualized tacitness as one characteristic of knowledge (Szulanski 1996; Simonin 1999b). In other words, researchers have proposed that knowledge is difficult to teach or put in writing because of the "stickiness" of knowledge. However, viewing tacitness as a mediator suggests that the concept is behavioral-based rather than knowledge-based: tacitness is not a function of knowledge but of learning behaviors. To put it differently, knowledge is difficult to teach or to put in writing because of the "stickiness" of the teaching and writing processes, not the "stickiness" of knowledge. Possibly, tacitness as a behavioral-based factor and tacitness as a knowledge-based factor are complementary conceptualizations. However, clear distinction and conceptualization are necessary because its meaning determines whether tacitness is external or internal to the learning system. This may provide an interesting research question for future studies.

The next proposed moderator was absorptive capacity, and the dissertation expected three positive moderating effects. First, it was expected that when the level of absorptive capacity was higher, the relationships from coordination and cooperation to partner-to-partner knowledge transfer would be stronger. Second, the dissertation hypothesized that when the level of absorptive capacity was higher, the relationships from knowledge sharing, social interaction, and personnel transfer to alliance-to-parent knowledge transfer would be stronger. Lastly, the dissertation proposed that when the

level of absorptive capacity was higher, the relationship between marketing knowledge and marketing innovation would be stronger. The results suggested that only the positive moderating effects of absorptive capacity for the relationships from coordination and cooperation to partner-to-partner knowledge transfer existed. The rest of the proposed absorptive capacity moderating effects were not supported. Additionally, a negative moderating effect of absorptive capacity on the relationship between marketing knowledge and marketing innovation was found.

The moderating effects of absorptive capacity on the relationships from coordination and cooperation to partner-to-partner knowledge transfer and the lack of moderating effects on the relationships from knowledge sharing, social interaction, and personnel transfer to alliance-to-parent knowledge transfer suggest that the conceptualization of these two transfers along two distinct pathways is correct. Absorptive capacity, which is reflected in prior related knowledge and the similarity in partners' knowledge bases, appears to affect only external knowledge transfer (partner-to-partner knowledge transfer) and not internal transfer (alliance-to-parent knowledge transfer). As Lane and Lubakin (1998) suggest, a firm's ability to learn from *another firm* depends on the similarity of both firms' knowledge bases. Their study, like most others, does not include learning within a firm. Retrospectively, the null moderating effects of absorptive capacity on the relationships from knowledge sharing, social interaction, and personnel transfer to alliance-to-parent knowledge transfer seem warranted. Since agents in the same organization most likely share the same knowledge base and have the same level of prior related knowledge, absorptive capacity may become irrelevant.

The results from Part 2 – with respect to the impacts of tacitness and absorptive capacity – appear in line with those of Part 1 to some extent. The latter results suggested firms requiring more tacit knowledge, such as those in high technology industries, achieve positive cumulative abnormal returns only when their knowledge base is similar to that of their alliances (such as when they are in the same industries). The findings underscore the importance of absorptive capacity in knowledge transfer, especially when knowledge is tacit.

The finding that absorptive capacity weakens the relationship between marketing knowledge and marketing innovation is startling. The counterintuitive result suggested that, while new knowledge transfer fosters marketing innovation through marketing knowledge, prior related knowledge embedded in absorptive capacity hinders the facilitation. One possible explanation is that prior related knowledge confines firms to search for demand only in those business areas that they have already researched or have knowledge about. Over time, this behavior will most likely limit firms' marketing innovation. As Rosenkopf and Nerkar (2001) found in their study of the optical disk industry; "the impact of exploration on subsequent technology development beyond the optical disk domain is greatest when exploration spans both organizational and technological boundaries" (p. 287). In the context of the model proposed in this dissertation, only longitudinal study can provide conclusive evidence for the observation.

The discussion will now turn to the partner related moderators: trust and cultural difference. The dissertation hypothesized that if the level of trust was high, then the relationships from coordination and cooperation to partner-to-partner knowledge transfer would be stronger than if the level of trust was low. The result supported the moderating

effects of trust on the relationships from coordination and cooperation to partner-to-partner knowledge transfer. The findings reinforced the conventional wisdom that trust facilitates knowledge transfer. The finding, however, differs from that of Lane, Salk and Lyles (2001), who contended that trust from foreign parents is not associated with the level of knowledge transfer (measured by the extent to which a firm learns from their partner). A comparison of this result with the dissertation findings suggests that trust does not have a direct effect on partner-to-partner knowledge transfer but rather moderates the relationships from other factors (e.g., coordination and cooperation) to partner-to-partner knowledge transfer.

The dissertation proposed that when the level of cultural distance was low, then the relationships from coordination and cooperation to partner-to-partner knowledge transfer would be stronger. Surprisingly, the results did not support the proposed relationships. The findings are inconsistent with the conventional wisdom that cultural difference deters the transfer of knowledge across alliance partners. A plausible explanation is that cultural difference may have a negative direct effect on learning mechanisms. Direct negative effects may cause coordination of the alliance tasks to be more difficult, and may make complete and accurate information unattainable. Cultural difference may thus affect the levels of coordination and cooperation, but it does not change the strengths of the relationships from coordination and cooperation to partner-to-partner knowledge transfer (i.e., there are no negative moderating effects).

The lack of moderating effects of cultural difference also contradicts the findings from Part 1, where both location and partner cultural differences were found to have negative impacts on cumulative abnormal returns. The results suggest that shareholders

may perceive the impact of cultural differences far more than do managers. Alternatively, shareholders may consider the content of cultural difference in a different way from managers. In a shareholder's view, cultural difference embedded in country difference may go beyond behavioral differences between partners and include political differences and geographical differences, for example.

The moderating effects of trust discussed above parallels the results from Part 1, which found that foreign parents without local partners achieve higher CARs than do foreign parents with local partners. While cultural difference may cause the inequality in CARs between the two groups, the results suggested that dependence on local partners may play a critical role in lowering trust, which is negatively viewed by shareholders. Future research should continue to investigate the complex relationships among trust, cultural difference and the knowledge transfer process.

6.2 Limitations and Additional Future Research Directions

Some possible limitations to the dissertation should be noted. In Part 1, there are two areas of limitations. The first deals with the methodology, whereas the second involves measures. Limitations related to the event study methodology lie in the boundary of assumptions for the study. First, the market model (used in Part 1 to calculate abnormal return) suggests that a firm's stock return is a linear function of market return. Although the market model is widely accepted, there may be some instances where the model may not hold true. Therefore, this limitation must be taken into account when interpreting the results of the study. Future research in this area may involve considering other models that may better capture the shareholder value associated with marketing alliances. Second, the event study assumes that the positive stock

reaction to an alliance formation announcement represents the positive long-term alliance performance that will in turn positively affect long-term performance of a parent firm. Although this assumption is validated elsewhere, it can be re-evaluated in the context of this dissertation by comparing the cumulative abnormal returns with other financial performance measures.

The second area of limitation for Part 1 is related to measures used in the study. Due to the nature of the secondary data used in the event study, psychometric properties cannot be assessed. Thus, to compare the results from Part 1 (shareholder perspective) versus Part 2 (managerial perspective), a few assumptions were made. The first assumption was that cultural difference can be captured by country difference. Second, it was assumed that if the parent is in the same industry as its alliance, it will possess a higher level of absorptive capacity, as both parent and alliance share a greater level of common knowledge. The last assumption was that knowledge required by firms in high technology industry is more tacit than that of low technology firms. Although each of these assumptions has some level of face validity, it was never tested whether shareholders or managers perceive that the proxies used actually reflect the meanings that this research wished to capture. Future research can address these measurement issues.

Limitations in Part 2 concern generalization of the results and unit of analysis. Several new constructs were developed for use in the study (e.g., marketing knowledge and marketing innovation). While testing supported the validities of the constructs, more research is needed to provide conclusive and generalizable evidence regarding the factors. Concerning unit of analysis, the dissertation employed non-dyadic data, which may be sufficient for testing the relationships within the context of the proposed model.

The results from non-dyadic data, however, may not capture relational concepts such as trust and cultural difference (see Achrol, Reve and Stern 1983). The extension of the study for future research may involve replications of the findings using dyadic data.

Some general limitations involving both Part 1 and Part 2 should be noted. While effort was made to obtain sample data that are comparable in both parts (samples from Part 2 were subset of samples in Part 1), the alliances in Part 1 may not be the same as the alliances that were assessed from the managerial perspective in Part 2. This is because it is common for a firm to have more than one alliance and, to protect respondents' confidentiality, the alliance names were not disclosed. Future research can extend the study by obtaining panel data that can compare and contrast the results from shareholder and managerial perspectives more conclusively. Finally, the customary call for longitudinal studies is made. As Doz (1996) put it: "While the importance of evolutionary processes is well recognized in many subfields of management and of organization theory, studies of strategic alliances as evolutionary processes are scarce" (p. 55). Future research that views a strategic alliance as an evolutionary process may provide more conclusive results on the antecedents and outcomes of marketing knowledge and marketing innovation.

BIBLIOGRAPHY

Achrol, Ravi Singh, Torger Reve and Louis W. Stern (1983), "The Environment of Marketing Channel Dyads: A Framework for Comparative Analysis," *Journal of Marketing,* 47, Fall, 55-67.

Agrawal, Jagdish and Wagner A. Kamakura (1995), "The Economic Worth of Celebrity Endorsers: An Event Analysis," *Journal of Marketing,* 59, July, 56-62.

Anand, Bharat N. and Tarun Khanna (2000), "Do Firms Learn to Create Value? The Case of Alliances," *Strategic Management Journal,* 21, 3, 295-315.

Anderson, James C. and David W. Gerbig (1988), "Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach," *Psychological Bulletin,* 103, 3, 411-423.

Armstrong, J. Scott and Terry Overton (1977), "Estimating Nonresponse Bias in Mail Surveys," *Journal of Marketing Research,* 14, August, 396-402.

Bagozzi, Richard P. and Jeffrey R. Edwards (1998), "A General Approach for Representing Constructs in Organizational Research," *Organizational Research Methods,* 1, 1, 45-87.

Barkema, Harry G., John H. Bell and Johannes Pennings (1996), "Foreign Entry, Cultural Barriers, and Learning," *Strategic Management Journal,* 17, 2, 151-166.

Barkema, Harry G., Oded Shenkar, Freek Vermeulen and John H. J. Bell (1997), "Working Abroad, Working with Others: How Firms Learn to Operate International Joint Venture," *Academy of Management Journal,* 40, 2, 426-442.

Bohn, Roger E. (1994), "Measuring and Managing Technological Knowledge," *Sloan Management Review,* 36, 1, 61-73.

Bollen, Kenneth A. (1989), *Structural Equations with Latent Variables.* New York: John Wiley & Son.

Bollen, Kenneth A. and Robert A. Stine (1993), *Bootstrapping Goodness-of-Fit Meausres in Structural Equation Models.* Newbury Park, CA: SAGE Publications, Inc.

Bone, Paula Fitzgerald, Subhash Sharma and Terence A. Shimp (1989), "A Bootstrap Procedure for Evaluating Goodness-of-Fit Indices of Structural Equation and Confirmatory Factor Models," *Journal of Marketing Research,* 26, February, 105-111.

Bresman, Henrik, Julian Birkinshaw and Robert Nobel (1999), "Knowledge Transfer in International Acquisitions," *Journal of International Business Studies,* 30, 3, 439-462.

Brown, Stephen J. and Jerold B. Warner (1985), "Using Daily Stock Returns," *Journal of Financial Economics,* 14, 1, 3-31.

Brown, Steven P., Pamela M. Homer and J. Jeffrey Inman (1998), "A Meta-Analysis of Relationships Between Ad-Evoked Feelings and Advertising Responses," *Journal of Marketing Research,* 35, February, 114-126.

Byrne, Barbara M. (1998), *Structural Equation Modeling with LISREL, PRELIS, and SIMPLIS: Basic Concepts, Applications, and Programming.* Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Calantone, Roger J. and Kim E. Schatzel (2000), "Strategic Foretelling: Communication-Based Antecedents of a Firm's Propensity to Preannounce," *Journal of Marketing,* 64, January, 17-30.

Cannon, Joseph P. and Christian Homburg (2001), "Buyer-Seller Relationships and Customer Firm Costs," *Journal of Marketing,* 65, January, 29-43.

CNN (2001). Bush, Postal Official Urge Caution with Mail. In *http:/www.cnn.com/2001/US/10/15/rec.mail.safety/index.html.*

Cohen, Wesley M. and Daniel A. Levinthal (1990), "Absorptive Capacity: A New Perspective on Learning and Innovation," *Administrative Science Quarterly,* 35, 1, 128-152.

Damanpour, Fariborz (1991), "Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators," *Academy of Management Journal,* 34, 3, 555-590.

Daniels, John D. and Lee H. Radebaugh (1998), *International Business: Environments and Operations.* Burr Ridge, Il: McGraw-hill.

D'Aveni, Richard A. and Anne Y. Ilinitch (1992), "Complex Patterns of Vertical Integration in the Forest Products Industry: Systematic and Bankruptcy Risks," *Academy of Management Journal,* 35, 3, 596-626.

Davenport, Thomas H., David W. De Long and Michael C. Beers (1998), "Successful Knowledge Management Projects," *Sloan Management Journal,* 39, 2, 43-57.

Doney, Patricia M. and Joseph P. Cannon (1997), "An Examination of the Nature of Trust in Buyer-Seller Relationships," *Journal of Marketing,* 61, April, 35-51.

Doz, Yves L. (1996), "The Evolution of Cooperation in Strategic Alliances: Initial Conditions or Learning Processes," *Strategic Management Journal,* 17, Summer, 55-83.

Drucker, Peter (1993), *Post-Capitalist Society.* New York: Harper Business.

Efron, Bradley (1982), *The Jackknife, the Bootstrap and Other Re-sampling Plans.* Philadelphia: Society for Industrial and Applied Mathematics.

Efron, Bradley (1987), "Better Bootstrap Confidence Interval," *Journal of American Statistical Association,* 82, March, 171-185.

Efron, Bradley and Robert Tibshirani (1986), "Bootstrap Methods for Standard Errors, Confidence Intervals, and Other Measures of Statistical Accuracy," *Statistical Science,* 1, 1, 54-77.

Glazer, Rashi (1991), "Marketing in an Information-Intensive Environment: Strategic Implications of Knowledge as an Asset," *Journal of Marketing,* 55, October, 1-19.

Grant, Robert M. (1996), "Toward a Knowledge-Based Theory Of the Firm," *Strategic Management Journal,* 17, Winter Special Issue, 109-122.

Grossman, Gene M. and Elhanan Helpman (1991), *Innovation and Growth in the Global Economy.* Cambridge, Mass: MIT Press.

Gulati, Ranjay (1995), "Does Familiarity Breed Trust? The Implications of Repeated Ties for Contractual Choice in Alliances," *Academy of Management Journal,* 38, 1, 85-112.

Hagedoorn, John and Jos Schakenraad (1994), "The Effect of Strategic Technology Alliances on Company Performance," *Strategic Management Journal,* 15, 4, 291-309.

Hamel, Gary (1991), "Competition for Competence and Inter-Partner Learning within International Strategic Alliances," *Strategic Management Journal,* 12, Summer, 83-103.

Hamel, Gary (1998), "Opinion Strategy Innovation and the Quest for Value," *Sloan Management Review,* 39, 2, 7-14.

Han, Jin K., Namwoon Kim and Rajendra Srivastava (1998), "Market Orientation and Organizational Performance: Is Innovation a Missing Link?," *Journal of Marketing,* 62, October, 30-45.

Hansen, Morten T. (1999), "The Search-Transfer Problem: The Role of Weak Ties in Sharing Knowledge Across Organization Subunits," *Administrative Science Quarterly,* 44, 1, 82-111.

Healy, Paul M., Krishma G. Palepu and Richard S. Ruback (1992), "Does Corporate Performance Improve After Mergers?," *Journal of Financial Economics,* 31, 2, 135-175.

Hennart, Jean-Francois (1988), "A Transaction Cost Theory of Equity Joint Venture," *Strategic Management Journal,* 9, 4, 361-374.

Herzog, Valerie Lynne (2001), "Trust Building on Corporate Collaborative Project Teams," *Project Management Journal,* 32, 1, 28-37.

Hofstede, Geert (1983), "The Cultural Relativity of Organizational Practices and Theories," *Journal of International Business Studies,* 14, 2, 75-89.

Hoopes, David G. and Steven Postel (1999), "Shared Knowledge, "Glitches," and Product Development Performance," *Strategic Management Journal,* 20, 9, 837-865.

Hu, Li-Tze and Peter M. Bentler (1995). Evaluating Model Fit. in *Structural Equation Modeling: Concepts, Issues and Applications*. R. H. Hoyle. Thousand Oaks, CA, SAGE Publications, Inc.

Huber, George P. (1991), "Organizational Learning: The Contributing Processes and the Literatures," *Organizational Science,* 2, February, 88-115.

Hurley, Robert F. and Tomas M. Hult (1998), "Innovation, Market Orientation, and Organizational Learning: An Integration and Empirical Examination," *Journal of Marketing,* 62, July, 42-54.

Hymer, Stephen (1976), *The International Operations of National Firms: A Study of Direct Investment.* Cambridge, MA: MIT Press.

Inkpen, Andrew C. (1996), "Creating Knowledge through Collaboration," *California Management Journal,* 39, 1, 123-140.

Inkpen, Andrew C. and Adva Dinur (1998), "Knowledge Management Processes and International Joint Venture," *Organizational Science,* 9, 4, 454-468.

Inman, J. Jeffrey and Leigh McAlister (1993), "A Retailer Promotion Policy Model Considering Promotion Signal Sensitivity," *Marketing Science,* 12, 4, 339-356.

Jaworski, Bernard J. and Ajay K. Kohli (1993), "Market Orientation: Antecedents and Consequences," *Journal of Marketing,* 57, July, 53-70.

Joreskog, Karl and Dag Sorbom (1996), *PRELIS 2: User's Reference Guide.* Chicago, IL: Scientific Software International, Inc.

Joreskog, Karl G. and Dag Sorbom (1993), *LISREL 8: A Guide to the Program and Applications.* Chicago: SPSS.

Kim, W. Chan and Renee Mauborgne (1999), "Strategy, Value Innovation, and the Knowledge Economy," *Sloan Management Journal,* 40, 3, 41-54.

Kogut, Bruce (1988), "Joint Venture: Theoretical and Empirical Perspectives," *Strategic Management Journal,* 9, 4, 319-332.

Kogut, Bruce and Harbir Singh (1988), "The Effect of National Culture on the Choice of Entry Mode," *Journal of International Business Studies,* 19, 3, 411-432.

Kogut, Bruce and Udo Zander (1993), "Knowledge of the Firm and the Evolutionary Theory of the Multinational Corporation," *Journal of International Business Studies,* 24, 4, 625-645.

Koh, Jeongsuk and N. Venkatraman (1991), "Joint Venture Formations and Stock Market Reactions: An Assessment in the Formation Technology Sector," *Academy of Management Journal,* 34, 4, 869-892.

Lane, Peter J. and Michael Lubakin (1998), "Relative Absorptive Capacity and Interorganizational Learning," *Strategic Management Journal,* 19, 5, 461-477.

Lane, Peter J., Jane E. Salk and Marjories A. Lyles (2001), "Absorptive Capacity, Learning, and Performance in International Joint Venture," *Strategic Management Journal,* 22, 12, 1139-1161.

Lane, Vicki and Robert Jacobson (1995), "Stock Market Reactions to Brand Extension Announcements: The Effect of Brand Attitudes and Familiarity," *Journal of Marketing,* 59, January, 63-77.

Lattin, James M. and Leigh McAlister (1985), "Using a Variety-Seeking Model to Identify Substitue and Complementary Relationships Among Competing Products," *Journal of Marketing Research,* 22, August, 330-339.

Li, Tiger and Roger J. Calantone (1998), "The Impact of Market Knowledge Competence on New Product Advantage: Conceptualization and Empirical Examination," *Journal of Marketing,* 62, October, 13-29.

Lyles, Marjorie and Jane E. Salk (1996), "Knowledge Acquisition from Foreign Parents in IJVs: An Empirical Examination in the Hungarian Context," *Journal of International Business Studies,* 27, 5, 877-903.

Madhok, Anoop (1995), "Revisiting Multinational Firms' Tolerance for Joint Ventures: A Trust-Based Approach," *Journal of International Business Studies,* 26, 1, 117-137.

Makhija, Mona V. and Usha Ganesh (1997), "The Relationship Between Control and Partner Learning in Learning-Related Joint Ventures," *Organization Science,* 8, 5, 508-527.

Makino, Shige and Paul W. Beamish (1998), "Performance and Survival of Joint Venture with Non-Conventional Ownership Structure," *Journal of International Business Studies,* 29, 4, 797-818.

Maltz, Elliot and Ajay K. Kohli (2000), "Reducing Marketing's Conflict with Other Functions: The Differential Effects of Integrating Mechanisms," *Journal of the Academy of Marketing Science,* 28, 4, 479-492.

McConnell, John J. and Timothy J. Nantell (1985), "Corporate Combinations and Common Stock Returns: The Case of Joint Ventures," *Journal of Finance,* 40, 2, 519-536.

Merchant, Hemant and Dan Schendel (2000), "How Do International Joint Ventures Create Shareholder Value?," *Strategic Management Journal,* 21, 7, 723-737.

Meschi, Pierre-Xavier (1997), "Longevity and Cultural Differences of International Joint Ventures: Toward Time-Based Cultural Management," *Human Relations,* 50, 2, 211-227.

Moorman, Christine and Anne S. Miner (1997), "The Impact of Organizational Memory on New Product Performance and Creativity," *Journal of Marketing Research,* 34, 1, 91-106.

Moorman, Christine and Anne S. Miner (1998), "Organizational Improvisation and Organizational Memory," *Academy of Management Review,* 23, 4, 693-723.

Mowery, David C., Joanne E. Oxley and Brian S. Silverman (1996), "Strategic Alliacne and Interfirm Knowledge Transfer," *Strategic Management Journal,* 17, Winter Special Issue, 77-91.

Nakata, Cheryl and K. Sivakumar (1996), "National Culture and New product Development: An Integrative Review," *Journal of Marketing,* 60, January, 61-72.

Nayyar, Praveen R. (1995), "Stock Market Reactions to Customer Service Changes," *Strategic Management Journal,* 16, 1, 39-53.

Nonaka, Ikujiro (1994), "Dynamic Theory of Organizational Knowledge Creation," *Organizational Science,* 5, 1, 14-37.

Parkhe, Arvind (1991), "Interfirm Diversity, Organizational Learning, and Longevity in Global Strategic Alliances," *Journal of International Business Studies,* 22, 4, 579-601.

Ravenscraft, D. and F. Scherer (1987), *Mergers, Sell-offs and Economic Efficiency.* Washington DC: Brookings Institution.

Reuer, Jeffrey and Mitchell P. Koza (2000), "Asymmetric Information and Joint Venture Performance: Theory and Evidence for Domestic and International Joint Ventures," *Strategic Management Journal,* 21, 1, 81-88.

Rosenkopf, Lori and Atul Nerkar (2001), "Beyond Local Search: Boundary-Spanning Exploration, and Impact in the Optical Disk Industry," *Strategic Management Journal,* 22, 4, 287-306.

Rumelt, Richard P. (1974), *Strategy, Structure and Economic Performance.* Boston, MA: Harvard University Press.

Sethi, Rajesh, Daniel C. Smith and C. Whan Park (2001), "Cross-Functional Product Development Teams, Creativity, and the Innovativeness of New Consumer Products," *Journal of Marketing Research,* 38, February, 73-85.

Siguaw, Judy A., Penny M. Simpson and Thomas L. Baker (1998), "Effects of Supplier Market Orientation on Distributor Market Orientation and the Channel Relationship: The Distributor Perspective," *Journal of Marketing,* 62, July, 99-111.

Simonin, Bernard L. (1999a), "Transfer of Marketing Know-How in International Strategic Alliance: An Empirical Investigation of the Role and Antecedents of Knowledge Ambiguity," *Journal of Business Studies,* 30, 3, 463-490.

Simonin, Bernard L. (1999b), "Ambiguity and the Process of Knowledge Transfer in Strategic Alliances," *Strategic Management Journal,* 20, 7, 595-623.

Singh, Harbir and Cynthia A. Montgomery (1987), "Corporate Acquisition Strategies and Economic Performance," *Strategic Management Journal,* 8, 4, 377-386.

Sinkula, James M., William E. Baker and Thomas Noordewier (1997), "A Framework for Market-Based Organizational Learning: Linking Values, Knowledge, and Behavior," *Journal of Academy of Management Science,* 25, 4, 305-318.

Sivasdas, Eugene and F. Robert Dwyer (2000), "An Examination of Organizational Factors Influencing New Product Success in Internal and Alliance-Based Processes," *Journal of Marketing,* 64, January, 31-49.

Slater, Stanley F. and John C. Narver (1995), "Market Orientation and the Learning Organization," *Journal of Marketing,* 59, July, 63-74.

Song, X. Michael, Jinhong Xie and Barbara Dyer (2000), "Antecedents and Consequences of Marketing Manager's Conflict-Handling Behaviors," *Journal of Marketing,* 64, January, 50-66.

Srivastava, Rajendra K., Tasadduq Shervani and Liam Fahey (1998), "Market-Based Assets and Shareholder Value: A Framework Analysis," *Journal of Marketing,* 62, January, 2-18.

Srivastava, Rajendra K., Tasadduq A. Shervani and Liam Fahey (1999), "Marketing, Business Processes, and Shareholder Value: An Organizationally Embedded View of Marketing Activities and Discipline of Marketing," *Journal of Marketing,* 63, Special Issue, 168-179.

Szulanski, Gabriel (1996), "Exploring Internal Stickiness: Impediments to the Transfer of Best Practice within the Firm," *Strategic Mangement Journal,* 17, Winter Special Issue, 27-43.

Tse, David K., Kam-hon Lee, Ilan Vertinsky and Donald A. Wehrung (1988), "Does Culture Matter? A Cross-Cultural Study of Executives' Choice, Decisiveness, and Risk Adjustment in International Marketing," *Journal of Marketing,* 52, October, 81-95.

Van Trijp, Hans C. M., Wayne D. Hoyer and J. Jeffrey Inman (1996), "Why Switch? Product Category-Level Explanations for True Variety-Seeking Behavior," *Journal of Marketing Research,* 33, August, 281-292.

Xiaohua, Lin and Richard Germain (1998), "Sustaining Satisfactory Joint Venture Relationships: The Role of Conflict Resolution Strategy," *Journal of International Business Studies,* 29, 1, 179-196.

Yli-Renko, Helena, Erkko Autio and Harry J. Sapienza (2001), "Social Capital, Knowledge Acquisition, and Knowledge Exploitation in Young Technology Firms," *Strategic Management Journal,* 22, 6/7, 587-613.

Yung, Yiu-Fai and Peter M. Bentler (1996), *Bootstrapping Techniques in Analysis of Mean and Covariance Structures.* Mahwah, New Jersey: Lawrence Erlbaum Associates.

Zander, Udo and Bruce Kogut (1995), "Knowledge and the Speed of the Transfer and Imitation of Organizational Capabilities: An Empirical Test," *Organization Science,* 6, 1, 76-92.

Zellner, Arnold (1962), "An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias," *Journal of the American Statistical Association,* 57, June, 348-368.