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The Importance of Market Opportunity Recognition Mechanisms in Interfunctional Management Teams

Frederick Lefferts Bonney Jr.
University of Tennessee - Knoxville

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To the Graduate Council:

I am submitting herewith a dissertation written by Frederick Lefferts Bonney Jr. entitled "The Importance of Market Opportunity Recognition Mechanisms in Interfunctional Management Teams." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Business Administration.

John T. Mentzer, Major Professor

We have read this dissertation and recommend its acceptance:

Ernest R. Cadotte, Mark A. Moon, Robert T. Ladd

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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The Importance of Market Opportunity Recognition Mechanisms in Interfunctional Management Teams

A Dissertation
Presented for
Doctor of Philosophy Degree
The University of Tennessee, Knoxville

Frederick Lefferts Bonney Jr.
August 2008

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Dedication

This dissertation is dedicated to my amazing wife Jennifer, my three beautiful children, Emma, Lauren, and Braden and the loving memory of one of my biggest cheerleaders, Lynne Bonney Busby.

Acknowledgements

I am sincerely grateful for a number of people who have either directly guided this research or encouraged me along the way. The faculty and staff in the Department of Marketing and Logistics at the University of Tennessee have made significant investments in helping me grow as a budding academic. I am much appreciative of my committee members, Dr. John T. Mentzer, Dr. Ernest Cadotte, Dr. Mark A. Moon, and Dr. Robert T. Ladd for mentoring me and giving freely of their time and effort to this project. Specifically, thanks to Dr. Mentzer who provided much needed guidance in the job search process and in the early stages of this dissertation. Thanks to Dr. Cadotte for believing in this research, the unwavering support of all of my “crazy” ideas during the dissertation process, and the countless suggestions. Also, thanks to Dr. Cadotte for his commitment and friendship to the doctoral students at The University of Tennessee. Finally, thanks to Dr. Moon for a being a good personal friend and mentor during the entire PhD process. This research has also benefited significantly from funding through the University of Tennessee’s Integrated Value Chain Forums.

From a personal standpoint, I will forever be indebted to my amazing wife, Jennifer, who made so many sacrifices over the last five years. Her tireless efforts as mother and business owner made the completion of the PhD process possible. Most of all, thank you to Jennifer for believing that I could do it. Also, thank you to my parents, Fred and Elaine Bonney, for their continued support and encouragement. Thank you to my mother-in-law, Julie Poston, for all of the hard work and sacrifices she made during this process. Finally, thank you to all of our extended family and friends for the kind words of support over the last five years.

Abstract

In today's fast moving business environments, managers must be able to gather and interpret data in such a way as to identify lucrative market opportunities. However, being able to exploit these opportunities is contingent on management's ability to sense important changes in the market or see the market in a new way and ultimately craft an appropriate response to these insights. Unfortunately, this ability to identify market opportunities has not been explored in the marketing literature. Very little is known about the cognitive processes managers use as they seek out market opportunities.

The purpose of this dissertation is to shed some light on these cognitive processes by developing a conceptualization of market opportunity recognition mechanisms. Specifically, market opportunity recognition mechanisms are conceptualized as a set of interrelated constructs that include management team situational awareness, management team creative problem solving and management team strategic and tactical agreement. This conceptualization is built from a thorough review of the entrepreneurship, creativity, cognitive science, and market orientation literatures as well as from insights gained from field interviews and observations. The market opportunity recognition mechanisms are tested in a nomological framework that includes a contingency based view of firm responsiveness. The test of the dissertation hypotheses was conducted using participants engaged in a dynamic market simulation. The results of the tests suggest that situational awareness is the foundational construct in market opportunity recognition mechanisms and that the interaction between situational awareness and team agreement on tactical and strategic actions increases the probability that the team will effectively align resources to market conditions. This ultimately results in increased financial performance.

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Chapter 1 – Introduction

CHAPTER OVERVIEW

Marketing scholars have devoted considerable time and attention to the notion of market orientation (MO) and its impact on the organization. In this information age, it is no wonder that researchers focus on the use of market information for the betterment of the firm. For the most part research on market orientation has been conceptualized as either an information sharing construct (Kohli and Jaworski 1990) or a cultural construct (Narver and Slater 1990). While information sharing is important, even market orientation scholars have commented that it is naïve to think that behavioral changes will occur in the firm based solely on an increase in customer or competitor information (Slater and Narver 1995).

Before actions can be taken, managers must think through the information to identify opportunities that in turn direct their responses and the tactics to be employed. In other words, the broad information content aspects of Narver and Slater's (1990) market orientation or the information flow aspects of Kohli and Jaworski's (1990) version of market orientation are both necessary but insufficient factors in being able to identify or exploit opportunities. In some ways the current conceptualizations of market orientation create a bit of a black box between the concepts found in market orientation and firm performance as depicted in Figure 1. Some level of "vision", "foresight" or "clairvoyance" is needed so that opportunities in the marketplace can be identified and acted upon based on the types and amount of market information flowing into the organization.

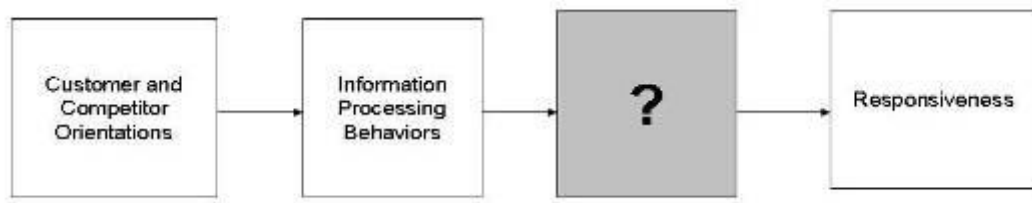


Figure 1 - The Black Box of Market Orientation

Research on market orientation has pointed toward cognitive processes of interpretation as the link between information content, information flow and responsiveness. However, as will be discussed later in this introduction, scholars have just begun to investigate these cognitive processes. Therefore it is critical to examine how managers think through information in ways that lead to the identification of market opportunities. The aim of this dissertation is to enhance understanding of how managers interpret information so as to identify market opportunities that will lead to increased financial performance if acted upon.

The main objective is to help managers and academics define and measure the cognitive processes that augment market orientation dimensions on the way to formulating timely and effective responses to dynamic market conditions. To accomplish this objective, the theory of entrepreneurial discovery, as well as interviews with managers and entrepreneurs, is called upon to develop a set of constructs that comprise market opportunity recognition mechanisms which capture the cognitive factors needed to identify and exploit opportunities. In addition to the development of the market opportunity recognition mechanisms constructs, the relationships between these

constructs will be tested within a nomological framework of the market opportunity recognition mechanisms and response aspects of market orientation. The testing of this theoretical framework is conducted in hopes of bridging the “interpretation” gap between traditional MO concepts and firm responsiveness.

While a detailed discussion of opportunities is found in Chapter 2, for purposes of this introduction it is worth noting that opportunities are defined as the situations to meet a market need or want through the creative combination of resources that deliver superior value for the customer and provide a profit for the firm (Archidivili, Cardozo and Ray 2003). In this dissertation, the term market opportunity is used to delineate between opportunities that exist in the marketplace and other types of opportunities (i.e., the opportunity to be promoted in a career). Examples of market opportunities include the chance to develop new products such as the ipod mobile music system or to create new forms of production and organization such as Ray Kroc’s system of McDonald’s franchises or Henry Ford’s efficient line method of car production. Also, market opportunities include the chance to use new types of raw materials in products such as Edison’s carbon filament that prolonged the life of electric light bulbs. In short, market opportunities are situations where the managers have the chance to create entirely new products or services, to serve new markets or to create new means of providing established products or services.

In the following sections of this chapter a market orientation is presented, followed by the relevant gaps in this base of research. Next, a brief review of the theoretical justification used to address the gaps in market orientation research is presented. This theoretical perspective is used to define and explain the constructs and

the causal mechanisms in play between the constructs. A conceptual framework of the opportunity recognition process is then presented and research objectives discussed. This chapter closes with a discussion of the contributions generated by this dissertation, as well as a brief description of the proposed methodology to test the proposed hypotheses.

Market Orientation

To date, much of the research on market orientation has focused on one of two aspects of the construct. One stream of research has investigated the information processing aspects of market orientation by concentrating on market information acquisition, dissemination and responsiveness originally developed by Kohli and Jaworski (1990). The second stream of research approaches market orientation from a cultural perspective, positing that market oriented firms are those whose culture directs the attention of *all* employees on customer needs and competitor maneuverings (Narver and Slater 1990).

Market Orientation as Information Processing Behaviors

The work of Kohli and Jawoski (1990, 1993) viewed market orientation as a set of information processing behaviors that firms enact in order to generate profits. Information generation, dissemination and responsiveness are the main components of this conceptualization of market orientation (Kohli and Jaworski 1990). Information generation is seen as the act of collecting data about a myriad of market factors that could affect the firm. Information generation is thought to be both informal and formal, deriving from casual scanning of the market place and structured market research respectively (Jaworski and Kohli 1993; Kohli and Jaworski 1990). Information

dissemination is comprised of the sharing of information between all units within the firm. Here, information flows in upward and downward directions and may be transmitted via informal “hall talks” or through formal channels such as CRM databases. Finally, responsiveness is seen as the action taken by the firm based on the market information that has been acquired and disseminated (Kohli and Jaworski 1990). Subsequent conceptualizations framed responsiveness as having two components, response design (planning aspect of responsiveness) and response implementation (execution aspects of responsiveness) (Jaworski and Kohli 1993).

Market Orientation as Culture

The second camp of market orientation research focuses on the cultural aspects of the phenomenon. Narver and Slater (1990) conceptualize market orientation as three components. The first is the degree to which the firm is customer oriented. Customer orientation is the “sufficient understanding of one’s target buyer to create superior value for them continuously” (Narver and Slater 1990, p. 21). Competitor orientation is the degree to which the firm’s managers understand the company’s strengths and weaknesses relative to competitor offerings. The third and final component of the Narver and Slater (1990) market orientation conceptualization is the interfunctional coordination needed within the firm such that firm resources can be combined to produce superior value for the customer. According to Narver and Slater (1990) the combination of the three market orientation components should lead to superior financial performance for the focal firm.

Market Orientation Research Gaps

Subsequent work on market orientation has sought to reconcile the two camps of market orientation. For example, Matsuno, Mentzer and Ozsomer (2002) and Hult, Ketchen and Slater (2005) combined the two conceptualizations by hypothesizing that the cultural constructs of Narver and Slater (1990) lead to the information processing behaviors of Kohli and Jaworski's (1990) conceptualization. However, this more holistic model of market orientation still lacks sufficient insight into the interpretation aspects of market orientation.

Just because members of a firm acquire and disseminate customer and competitor information in a coordinated effort to create customer value does not mean that the firm will achieve a sustained market advantage. Work on market based organizational learning points out this shortcoming of current MO models by illustrating the importance of the cognitive aspect of information processing (Baker, Sinkula and Noordewier 1997). Thus, a considerable contribution can be made to market orientation research by empirically investigating how corporate decision makers *interpret* market information on the way to setting marketing strategy and altering marketing tactics.

Cognitive Shortcomings of Market Orientation

While researchers have acknowledged the importance of interpretation in market orientation and its link to performance, most of the work in interpretation has been conceptual in nature (Sinkula 1994; Slater and Narver 1995). To move forward, researchers must begin to develop measures of interpretation. This is no small task as the tacitness of cognition makes measuring interpretation difficult. This explains the lack of

depth and over simplification in operationalizing the cognitive elements of MO in studies that have attempted to empirically test the importance of interpretation. For example, Hult, Ketchen and Slater (2005) simply asked respondents whether or not they developed a shared understanding of market information with other managers in the firm. This type of operationalization sheds no real light on the issue as to how members of the organizations reached that understanding. Furthermore, the over emphasis on “shared interpretation” detracts from the importance of cognitive processing of information in that it places the emphasis on reaching a consensus. It is plausible, and probably common, that members of an organization reach a shared understanding about the market that is inaccurate resulting in flawed responses to market events. Thus, in order for market orientation research to move forward, scholars must pursue insights into the cognitive processes that lead one firm to notice, evaluate and act on market events appropriately and while other firms sit idly by as the opportunity passes or develop inappropriate responses.

Response Shortcomings of Market Orientation

As mentioned in the review of market based learning and market orientation literature, the response aspect of MO is a separate but not so understood dimension that links information processing dimensions and performance (Hult, Ketchen and Slater 2005). Prior conceptualizations have equated responsiveness with strategy implementation and planning. However, as posited by the theory of entrepreneurial discovery, performance is only sustained if the response is accurate and fits the changing conditions of the market. This represents a significant opportunity for MO researchers as

a contribution can be made through the re-conceptualization of responsiveness that includes an accuracy perspective. Furthermore, an empirical test of the relationships between traditional MO elements and an accuracy component of responsiveness would add to market orientation research.

Methodological Shortcomings of Market Orientation

Market orientation has been mostly conceptualized as an organizational phenomenon. Yet empirical studies of the market orientation phenomenon have used single respondent, cross-sectional research almost exclusively. Harris (2002) argues that past research methods have two main limitations to current approaches to the market orientation investigation. First, the single respondent survey method rests on the assumptions that the respondent has knowledge of the culture or information processing behaviors of the entire firm and that this knowledge is accurate. These assumptions seem a bit bold in the face of research that highlights the prevalence of organizational sub-cultures and the diversity of communication processes across the firm (Harris and Ogbonna 1999). Second, single-respondent methods also assume that relevant information about the degree of customer or competitor orientation can be ascertained solely by a single, internal respondent. However, the degree to which a firm is customer or competitor oriented lends itself to inquiry via dyadic research. In other words, customers should be surveyed to truly determine the level of customer orientation within the firm. An additional area of weakness in market orientation research is the predominance of self-reported dependent variables. From MO's impact on profitability and market share at the firm level to creativity, innovativeness and profitability at the

new product level, researchers have relied on self-reports as the primary means of measuring outcome variables.

In sum, market orientation research would greatly benefit from alternative methods of inquiry so that all aspects – rigor, richness, and generalizability – can be accounted for within the market orientation domain (McGrath 1982)

THEORETICAL JUSTIFICATION

In the face of the gaps in extant market orientation literature, this dissertation attempts to use an alternative theoretical perspective to justify construct definitions and to develop formal hypotheses about the relationships between these constructs. The following sections outline the theoretical domain used for in the dissertation including a brief discussion of the shortcomings of the research that has used this theoretical perspective in the past.

Austrian Theory of Entrepreneurial Discovery

In an attempt to rectify some of the shortcomings of market orientation research, this dissertation calls upon the theoretical foundations of Austrian theories of economics as the basis for construct and hypotheses development. These Austrian theories emphasize learning as a means of generating competitive advantages but bring a slightly different perspective than past theories used in market orientation research. Austrian economics was developed in the early 1900's in response to the shortcomings of the neoclassical economic view of markets. Early Austrian economists argued that neoclassical economics overlooks innovation and creativity in the marketplace. This

notion of creativity is captured best in Israel Kirzner's theory of entrepreneurial discovery (1973; 1997).

Kirzner's theory of entrepreneurial discovery posits that certain actors in the marketplace have access to information unavailable to other market actors. In addition, the users of market information must be able to recognize patterns and changes in the market so that opportunities can be discovered, or to use the data to detect the opportunity to drive change in the market itself (Kirzner 1999). Herein, this process of discovering opportunities is known as market opportunity recognition. Entrepreneurial discovery emphasizes that the response taken as a result of the discovery of an opportunity must be accurate and fit market conditions, in addition to being timely. Therefore, applying entrepreneurial discovery to market orientation represents a significant opportunity to move market orientation research forward. More on the connections between the two streams of research is provided in Chapter 2.

Entrepreneurial Discovery Research Gap

Since Kirzner first proposed the theory of entrepreneurial discovery (1973), there has been a great deal of conceptual work surrounding the theory in the management and entrepreneurship literature. However, this stream of research has not moved forward due its lack of formal investigation, specifically a lack of measurement and testing involving market opportunity recognition constructs.

Empirical Investigation of Market Opportunity Recognition

Several scholars have used theories from the cognitive sciences to help explain the ability to recognize opportunities (Baron 2006; Baron and Ensley 2006; Baron and

Ward 2004; De Konig 1999; Gaglio 2004; Gaglio and Katz 2001; Mitchell, Friga and Mitchell 2005; Mitchell et al. 2002; Ward 2004). Still others have focused on creativity as a means of explanation (Corbett 2005; Lumpkin, Hills and Shrader 2001; Lumpkin and Lichtenstein 2005; Smith and Shalley 2003; Ward 2004). However, most of this work on opportunity recognition is purely conceptual and has not been tested empirically.

Notable exceptions include studies by Kaish and Gilad (1991), Busenitz (1996), Hills and Shrader (1998) and Sheperd and DeTienne (2005). The Kaish and Gilad (1991) and Busenitz (1996) studies used an information asymmetry approach to explaining market opportunity recognition. While these studies attempted to study the concept of entrepreneurs' alertness to opportunities, both suffered from methodological issues including lack of proper measurement development and poor sampling procedures. The studies by Hills and Shrader (1998) and Sheperd and De Tienne (2005) suffered from operationalization problems. For example, both studies defined market opportunity recognition as a cognitive and creative process, yet they operationalized MOR as the number and quality of opportunities listed by study participants when presented with a complex business scenario. Clearly, using quantity and subjective quality measures for MOR does not shed light on the cognitive process itself. The overwhelmingly conceptual research and poorly executed empirical work on market opportunity recognition calls for increased rigor in the areas of measure development and hypotheses testing.

CONCEPTUAL FRAMEWORK

As a means of filling these research gaps, this dissertation develops a set focal constructs which make up the market opportunity recognition mechanisms and places the

constructs within a nomological framework as shown in the conceptual model found in Figure 2. Chapter 2 provides a detailed discussion of the market opportunity recognition mechanisms, but for purposes of discussion, these constructs represents the cognitive processing aspect of market information absent from past models of market orientation. Chapter 2 will develop and justify the definitions of each of the market opportunity recognition mechanisms constructs and provides the rationale for the hypothesized relationships between the constructs.

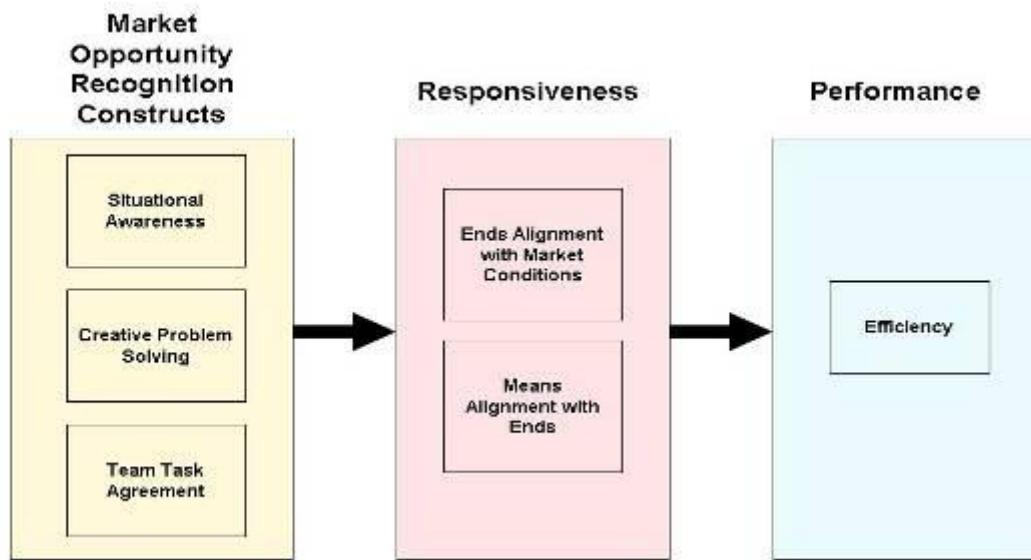


Figure 2 - Conceptual Model of the Dissertation

RESEARCH AIM AND QUESTIONS

The challenge facing organizations is not an issue of gathering and disseminating customer and competitor information. The challenge is the ability to identify when action needs to occur and what is the appropriate response to the ever changing marketplace is developed. Based on prior research on market orientation, very little insight into the processes for determining the best response has been provided. Previous research on market orientation has presented a cultural perspective and information sharing perspective. This dissertation seeks to develop and test a third perspective; a cognitive perspective of market orientation.

The broad aim of this dissertation is to determine why some management teams are able to use market information to develop accurate and timely responses to changing market conditions and other teams cannot. With this stated research aim in mind, the following research questions will be explored.

1. What are the key constructs comprising the cognitive constructs that make up market opportunity recognition mechanisms?
2. How can these market opportunity recognition mechanism constructs be measured?
3. How do the key constructs work together so that the management team can identify and respond to changing market conditions?

RESEARCH CONTRIBUTIONS

The investigation of the research questions stated in the previous section provides several contributions to market orientation research. First, tackling these questions calls for the application of a new theoretical lens to market orientation research. By applying the theory of entrepreneurial discovery, this dissertation provides a richer theoretical explanation as to why acquiring and sharing market information leads to better financial performance. In this sense, the black-box of interpretation in market orientation research is illuminated.

Also, this dissertation provides a richer conceptualization and operationalization of the cognitive processes necessary to convert shared market information into timely and accurate marketing responses. This contribution comes in response to organizational learning scholars who argue that the cognitive processes are difficult to capture but are critical if market orientation research is to progress (Baker, Sinkula and Noordewier 1997). This dissertation attempts to develop and use reliable and valid measures of market opportunity recognition mechanism constructs that have been missing from market orientation, organizational learning, and entrepreneurship research.

Another contribution of this dissertation is that a fine-grained approach to market orientation is taken. This approach conceptualizes the “dimensions” of traditional market orientation models as stand alone constructs worthy of further exploration. For example, responsiveness, as investigated in past studies of MO has been very narrowly defined and operationalized. In this dissertation, responsiveness is analyzed and broken into unique constructs that provide a better understanding of the concept.

Finally, this study contributes to the MO research through a unique methodology that allows for deeper investigation into the cognitive aspects of market orientation. The methodology uses controls for single-respondent biases and uses objective dependent variables, which could give the MO research field greater confidence in past findings as well as confidence in the new constructs presented herein.

RESEARCH APPROACH

As mentioned previously, this dissertation takes a novel approach to MO research that reduces the inherent shortcomings of previously used methodologies (Creswell 2003; McGrath 1982). In other words, the alternative method provides substantiation of constructs, stronger support for prior hypotheses and more confidence in prior results (Eisenhardt 1989). The research approach in this dissertation can be divided into three parts. In the first part, a thorough review of relevant literature is conducted. This review includes literature from entrepreneurship, cognitive science, organizational learning, strategic management and market orientation. Insights from the literature review are used to define constructs as well as develop a theoretical model that hypothesizes relationships between the constructs. In addition to reviewing past literature related to the topics of this dissertation, several interviews with experienced managers and entrepreneurs were conducted and observation data was collected to further the researcher's insights into the phenomenon of opportunity recognition.

This dissertation attempts to develop a scale for measurement instruments related to the "interpretation" processes mentioned in the section above. In doing so, the guidelines for scale development proposed by Churchill (1979) and Rossiter (2003) will

be followed. Multiple samples were taken from participants engaged in a business simulation (discussed in the next paragraph) as a means of refining and purifying a valid and reliable instrument measuring the market opportunity recognition mechanisms constructs. As mentioned, these scale development procedures came after several qualitative interviews with the simulation participants, as well as entrepreneurs and executives working in “live” businesses.

The third element of the research approach is to use a survey methodology in conjunction with a business simulation in the process of testing the conceptual model found in Figure 2. In this simulation, team members were assigned areas of responsibility equating to functional areas of a corporation (marketing, sales, manufacturing etc.). Once areas of responsibility are established, teams were charged with the task of starting a computer manufacturing firm that competes against teams also starting out in the PC industry. This simulation is a realistic way of investigating how members of the organization interpret market information due to the many different streams of information available to the firms and the choices that need to be made in running the corporation. Surveys were used at various points during the game to collect data on the antecedent and mediating variables, and objective performance data (generated by the computer software) were used to assess outcomes.

Researchers have acknowledged the benefit of using simulations in the study of business phenomenon because of the inherent benefits provided by simulated task environments. Dickinson et al (2004) argue that the use of simulations provide controls that improve the internal validity of the study, and are realistic enough to produce some level of external validity. Dickinson et al (2004) posit that additional advantages of using

simulations in business research include high participant involvement, ease of replicability, compression of longitudinal phenomena, and the capacity to investigate topics too complex for broad field surveys. Each of these benefits applies to the present study of market orientation.

Specifically, by surveying executive teams responsible for starting and running a simulated business in direct competition with other teams, this method allows for the collection of insights from the entire “firm.” Also, this methodology has advantages over past research in entrepreneurial cognition because it attempts to collect data from people who are in the “act” of starting and running the business as opposed to highly retrospective surveys that ask people to think back on past corporate processes (Gaglio and Katz 2001). Finally, this methodology allows investigation of constructs that are problematic in broad, cross-sectional survey designs and uses outcome measures that are not self-reported. In short, this method is useful in the development stage of theory testing and construct measurement under controlled conditions (Gundlach, Achrol and Mentzer 1995; Gundlach and Cadotte 1994; Tedeschi, Schlenker, and Bonoma 1973), which is relevant to the study at hand.

ORGANIZATION OF DISSERTATION

Chapter 2 presents the literature review used to provide construct definitions and formal hypotheses tested in the empirical portion of the dissertation. Chapter 3 provides the dissertation methodology. In Chapter 3, details of the simulation game are discussed, as well as the survey methodology employed. The survey discussion includes a detailed explanation of measurement construction and purification, as well as how the data in this

study were collected and analyzed. Chapter 4 presents the results of the statistical procedures used to test the dissertation hypotheses as well as an empirical evaluation of the final measures used herein. Chapter 5 concludes the dissertation with a discussion on the findings, the limitations of the current study and the future research opportunities derived from this dissertation

Chapter 2 – Building the Theory

CHAPTER OVERVIEW

This chapter provides a review of the literature used to justify the conceptual model presented in Chapter 1. As mentioned in the previous chapter, scholars need to investigate the importance of managerial team cognition in the relationship between traditional views of MO and firm performance. Therefore, this chapter includes a review of the market orientation and entrepreneurial cognition literature, as well as the team cognition research, in order to bring a cognitive perspective to MO research. From this literature base, an explanation of the relationships between MO and Market Opportunity Recognition Mechanisms are provided, as well as the relationship between market opportunity recognition mechanisms and firm responsiveness. This explanation leads to the generation of formal hypotheses presented at the end of the chapter.

The chapter is organized as follows. First, parallels between the concepts of market orientation and entrepreneurship are presented. Afterward, a review of the entrepreneurial cognition and creative thinking literature is presented in order to form a working conceptualization of the market opportunity recognition mechanisms. The details of qualitative research conducted used in the course of the research follows the literature review. The literature and the qualitative data are combined to develop conceptual definitions of market opportunity recognition mechanisms in the proceeding section. The next section discusses past conceptualizations of responsiveness often found in MO research. From this review, a formal definition of responsiveness is presented as well. Finally, the conceptual model is revisited and

formal hypotheses are presented based on the theoretical underpinnings of entrepreneurial discovery (Kirzner 1999).

MARKET ORIENTATION AND ENTREPRENEURSHIP

PARALLELS

Before delving into the conceptualization and operational definitions of the constructs in this dissertation, it is helpful to present some background on the parallels between entrepreneurship and market orientation. While both research streams focus on unique phenomena, the lineages of the two are not altogether different and when looking at the origins of both it becomes apparent that similarities exist. In this section, a brief review of the domains of market orientation and entrepreneurship is presented in order to illustrate the importance of linking the two via the conceptual model that follows the construct definitions.

Market Orientation

The concept of market orientation is deeply rooted in the marketing concept. For many years, marketing was thought to belong in the domain of pure economic exchange (Cherington 1920; Copeland 1920; Weld 1916), but as more attention was given to the notion of marketing, its domain was broadened to include the social aspects of exchange. With this social perspective, the field of marketing began to explore the importance of understanding and satisfying customers as a source of competitive advantage and increased profits (Drucker 1954; Kotler 1972; Levitt 1960; McKitterick 1957). By the late 1970s and early 1980s, scholars had formally defined the marketing concept as a normative model for corporate behavior. Houston (1986) expressed the marketing concept as an entity's achievement of exchange related goals via

the understanding of potential exchange partner's needs and wants, understanding the costs associated with providing for those needs and wants and then designing and producing the goods and services to meet those needs and wants. This definition clearly builds off of the work of other marketing concept scholars who broke the concept into three main parts; (1) the integration and alignment of all functional units within the firm, (2) placing the customer's needs and wants at the center of the firm's attention, and (3) a profit orientation (Barksdale and Darden 1971; Bell and Emory 1971; King 1965; McNamara 1972).

As time passed, researchers began to empirically investigate the marketing concept and the link to financial performance (Lawton and Parasuraman 1980). In doing so, researchers were forced to develop operationalizations of the marketing concept for testing purposes. Most scholars built off of the idea that the concept included functional integration, knowledge of customers (including the amount of information and the degree that the information is used) and that profitability is an important consideration (Kohli and Jaworski 1990; Lawton and Parasuraman 1980; Narver and Slater 1990). It is from this operationalization process that the two modern camps of marketing orientation emerged and are still at the heart of some conflict in this area of marketing.

As mentioned in Chapter 1, Narver and Slater's (1990) conceptualization of market orientation takes a cultural perspective. The main components of this conceptualization are a customer orientation, a competitor orientation, functional integration, and a long-term profit orientation. Customer orientation is defined as sufficient understanding of target buyers. Competitor orientation refers to understanding competitor strengths and weaknesses as well as their strategies and capabilities. Interfunctional integration is the coordination of company resources so that value can be created for target customers. Narver and Slater's (1990)

conceptual framework that links the proposed dimensions is not linear and posits that it is the inter-play between the dimensions that leads to profitability. Regardless of the mechanisms at work, it is apparent that this conceptualization of market orientation is linked to the original idea of the marketing concept.

Likewise, Kohli and Jaworski (1990) conceptualized market orientation with a marketing concept foundation, focusing on the information acquisition and information sharing aspects of the marketing concept. The basic tenet of this conceptualization is that the linear process of information generation and dissemination leads to a corporate response that in turn leads to increased profitability. Intelligence generation is the process by which firms acquire intelligence about customers' current and future needs and other aspects of the market. Intelligence dissemination refers to the degree that information is circulated in the organization. This circulation encompasses both formal and informal information sharing opportunities as well as both top down and bottom-up sharing processes. Responsiveness captures the action component of market orientation and the marketing concept, and includes the types of products and number of products and services a firm develops, the means of distribution, pricing changes and promotion efforts.

Trends in Market Orientation Research

The majority of research on market orientation has been on refining the conceptualization of the constructs, identifying antecedents and consequences of market orientation (Brady and Cronin 2001; Hult and Ketchen 2001; Im and Workman 2004; Jaworski and Kohli 1993, 1996; Kennedy, Gollsby, and Arnould 2003; Lukas and Ferrell 2000; Matsuno, Mentzer and Ozsomer 2002; Sigauw, Brown and Widing 1994) and on MO measurement development (Deshpande and

Farley 1998; Deshpande, Farley and Webster 1993; Kohli, Jaworski, and Kumar 1993; Matsuno, Mentzer and Rentz 2005; Narver, Slater, and MacLachlan 2004). It is important to note that most of this research has been conducted under the umbrella of one camp (market orientation as information processing) or the other (market orientation as culture).

Until recently, researchers made little effort to reconcile the two streams of thought. But scholars have become aware of the importance of formulating a combined conceptualization and measurement of market orientation (Deshpande and Farley 1998; Hult, Ketchen and Slater 2005). With this aim in mind, researchers have begun to investigate the differences, if any, between the measurements of MO to determine if prior measurement work has been in fact measuring the same thing regardless of the scale used. For example, Deshpande and Farley (1998) found that statistical comparisons of the Narver and Slater (1990), the Kohli, Jaworski, and Kumar (1993) and the Deshpande, Farley and Webster (1993) scales showed no significant differences. Their conclusion was that the scales are interchangeable and they went so far as to produce a valid scale of MO by combining and reducing the aggregated scales down to just ten items. On the other hand, other scholars have found that the two views of MO are in fact different. Hult, Ketchen and Slater (2005), hypothesized a measurement model that utilized both cultural and information processing constructs of MO and found that the two represented unique sets of constructs. Their conclusion was that the two conceptualizations of MO “exemplify both conceptual and empirical distinctiveness” (p. 1179). Likewise, Matsuno, Metzer and Rentz (2005) reconciled the differences of the two conceptualizations by positing that the cultural aspects of MO are causal antecedents to the information processing aspects. The results of this study were mixed in that the some of the analysis favored the causal MO model and other aspects of the analysis favored Narver and Slater’s (1990) simpler cultural scale.

Another avenue of market orientation research is the investigation of market orientation in the context of organizational learning. Interest in market orientation has increased in parallel with increased interest in organizational learning. Huber's (1991) review of organizational learning processes and the literature relevant to organizational learning was written about the same time as both Kohli and Jaworski's (1990) and Narver and Slater's (1990) initial articles on market orientation. Over time, the two streams of market orientation and organizational learning have become combined. As the two streams of research were combined in the marketing literature, scholars began to refer to the combination as market-based organizational learning. Through the work on market based organizational learning, scholars began to combine Kohli and Jaworski's (1990) information generation and dissemination dimensions with Huber's (1991) interpretation and memory dimensions in a framework of market-based organizational learning (Sinkula 1994; Sinkula, Baker and Noordewier 1997, Slater and Narver 1995). Sinkula (1994) justified this combination of the four components by commenting that simply increasing the amount of information flowing in from the market and circulated in the organization is necessary but not sufficient to improve managerial decision making. It is not uncommon to see the four components of market based organizational learning now referred to as market orientation (Hult, Ketchen and Slater 2005).

Another characteristic of market orientation research is that it has been primarily treated as an organizational level phenomenon. For example, operationalization of the various market orientation dimensions has been directed at the firm as a whole as opposed to the individual manager level. Likewise, most of the antecedents and consequences of market orientation have been studied at the organizational level.

Entrepreneurship

Entrepreneurship as an academic discipline is also rooted in the study of economics. Like the marketing concept, the concept of entrepreneurship began to break away from neoclassical views of simple supply, demand and price equilibriums. The notion of entrepreneurship was first introduced by economists interested in the outcomes produced by entrepreneurs. During this time, entrepreneurs were considered risk bearers in the marketplace whose function was to grease the wheels of market exchanges through their financing activities (Cantillon 1775; Say 1821). Building off Say (1821), Walras (1877) began to explore an alternative conceptualization of entrepreneurs as persons who coordinate resources and initiate change in the marketplace. The primary function of entrepreneurs is deciding what to do and how to do it without certainty of future outcomes (risk bearers) (Knight 1921). However, these early ideas about entrepreneurs were kept out of economic models of the day.

Emergence of Austrian Economics

Contrary to this omission, Menger (1888) focused on the impact of entrepreneurs in economic models, and argued that entrepreneurs could not be assumed away since it is their individualism and subjective views of the market that create change in market equilibrium. Thus, entrepreneurship should be a factor in economic models and the Austrian school of economics was born. A detailed characterization of Austrian economics is found in Jacobson's (1992) review of these theories on strategy. In this review, the author identifies four main premises that distinguish the Austrian school from other streams of economic thought: (1) the objective of the firm is entrepreneurial discovery, (2) markets are in a constant state of flux and

are best characterized by disequilibrium, (3) profitability is heterogeneous, and (4) most success factors are unobservable.

The first characteristic of entrepreneurial discovery highlights the importance of discovery and innovation in generating profits as opposed to monopolistic forces suggested by the neoclassical traditions. In other words, firms, and individuals for that matter, are able to collect above average returns because they have the ability to “see” a discrepancy between what is currently being done and what could be done (Mises 1949). Insights into better ways to allocate resources are due to the entrepreneur’s possession of superior information and in his or her ability to process information in such a way that previously overlooked opportunities are discovered (Hayek 1945; Kirzner 1997). Exploitation of these opportunities typically comes from the entrepreneur’s introduction of new goods or services, new qualities of current goods and services, new methods of production, new sources for raw materials or intermediate goods, new organizational forms, and opening new markets (Schumpeter 1942). Due to the exploitation of these newly discovered opportunities, Austrian economists argue that markets are thrown into states of disequilibrium, which leads to the second and third premises of Austrian economics. Some firms in the market will gain abnormal profits as a result of the insights they have and the actions they take. Thus, these profits will be maintained until competitors gain the same insights and are able to take similar actions (Lippman and Rumelt 1982; Winter 1987). However, according to the Austrian school, markets rarely reach a state of equilibrium due to the disruptive nature of the “next” opportunity exploitation (Schumpeter 1942). Often the insights of entrepreneurs are flawed, resulting in a perpetuation in disequilibrium as alert entrepreneurs seek to exploit the mistakes of market pioneers (Ioannides 1999; Kirzner 1997). This dynamic nature

of markets also accounts for the heterogeneous profits characterization of Austrian economics (Jacobson 1992).

Finally, the tacit nature of the discovery process leads to the fourth premise of Austrian economics, unobservable success factors. The acquisition and use of information in ways that yield new insights is extremely difficult to emulate due to its unobservability. Thus, it is these invisible factors that are likely to have the most prolific impact on performance (Reed and DeFillippi 1990; Winter 1987).

Research on Entrepreneurial Man

Schumpeter (1934) furthered Menger's arguments going so far as to say that risk is the essential concept of entrepreneurship since a person need not own resources to engage in entrepreneurial behavior. Schumpeter (1942) defined entrepreneurship as the carrying out of new resource combinations through the entrepreneurs' views of the market, their ability to create, and the power to overcome skepticism.

Another early Austrian economist, von Hayek (1945) had similar views of entrepreneurship but argued that information and knowledge asymmetries were the impetus for entrepreneurial behaviors. According to von Hayek, information is not perfect, as espoused by neoclassical economists. Instead, he argued that the amount of "scientific" knowledge and contextual knowledge was asymmetric across individuals. This information asymmetry results in individuals being able to identify mismatches in the way resources are currently allocated in the market and the way they *should* be allocated in order to generate high profits (Hayek 1945). Kirzner combined Hayek's work on information asymmetry with work by von Mises (1949), who argued that entrepreneurs have an innate sense that allows them to see patterns in

information that others are unable to detect. This combination of ideas yielded the theory of entrepreneurial discovery, which emphasizes both information asymmetry and individual learning as the key to entrepreneurial success (Kirzner 1979; 1999).

This focus on the individual has had a major impact on entrepreneurial research since Kirzner developed his theory in the late 1970s. Out of this individualistic perspective came research that focused on the psychological make-up and the leadership abilities of entrepreneurs and the impact these characteristics have on an entrepreneur's success (Cunningham and Lischeron 1991; Stevenson and Jarillo 1990). For example, Brockhaus and Horowitz (1986) investigated the individual's risk tolerance as an antecedent to entrepreneurial behavior. Still others have investigated tolerance for ambiguity as the locus of entrepreneurship (Begley and Boyd 1987). However, most of these "trait" studies provide little explanation as to why certain people engage in entrepreneurial behaviors and their ultimate success (Cooper, Dunkelberg, and Woo 1988).

This heavy emphasis on the individual traits and on corporate culture in regard to entrepreneurship has created conceptual problems for entrepreneurship scholars. As researchers conducted their studies of entrepreneurs themselves, the concept of entrepreneurship began to be equated with new venture formation (Carland et al 1984; Eckhardt and Shane 2003; Shane and Venkataraman 2000). Recently, the definition of entrepreneurship as the formation of a new business has been called into question. Scholars have fallen back on the early Austrian view that entrepreneurship is about introducing something new into the market based on resource mismatches. The entrepreneur always embodies the "possibilities of escape from what might otherwise appear to be incomprehensible, or from what might otherwise appear to us to be a chaotic, indifferent, or incorrigible world" (Thayer 1988, p 250). Thus, scholars are beginning to

assert that the heart of entrepreneurship research is the study of "...how in the absence of current markets for future goods or services, these goods or services come into existence"

(Venkataraman 1997, p. 120). Through this reorientation, entrepreneurship research has become focused on opportunities and the processes of discovery, evaluation, and exploitation of opportunities as well as the set of individuals who discover, evaluate and exploit them (Low 2001; Shane and Venkataraman 2000).

Once again literature rooted in Austrian economics was consulted in providing a definition of opportunity. Often the term "business opportunity" or "market opportunity" has been associated with the chance to start a new business (Shane and Venkataraman 2000). Recently, this narrow view of "opportunities" has come under great criticism by those who argue that business "opportunities" are much broader than simply the chance to start a new company (Baron 2006; Dutta and Crossan 2005; Eckhardt and Shane 2003; Hulbert, Brown and Adams 1997). In the broadest sense, opportunities are resource misallocations where the potential exists for resources to be deployed in a more efficient and/or effective manner. Referencing Schumpeter (1942), these scholars identify five types of opportunities. These include the potential for (1) a new means of production, (2) new types of products or qualities of products, (3) opening of new markets for current goods, (4) utilizing new sources of supply of production inputs and (5) developing new organizational forms. From these five types of opportunities, it is apparent that "opportunities" exist for both established firms and for firms not yet created.

Another aspect of the Austrian characterization of opportunities is the importance of profit generation (Kirzner 1997; Schumpeter 1942). In some sense, the Austrian theories of economics argue that the potential to turn a profit is what sets an opportunity apart from an idea (Kirzner 1997). From these points of view, "opportunities" seem to have two characteristics.

First, they involve some *new* form of means, end, or means-end relationships and second, opportunities result in the generation of economic value (i.e., profits). For purposes of this dissertation, a definition that encompasses these two aspects of “opportunities” and has been found in previous research will be used. Here, opportunity is defined as *a situation in which new goods, services, raw materials, markets or organizing methods can be introduced through the creative combination of resources, which results in superior value for the customer and the generation of economic value for the firm* (Archidivili, Cardozo and Ray 2003; Baron 2006; Casson 1982; Eckhardt and Shane 2003; Shane and Venkataraman 2000).

The Importance of Linking Market Orientation and Entrepreneurship

With a general idea of the two domains of marketing orientation and entrepreneurship presented, the focus turns to the potential progress that can be made by linking the two streams of literature. In many ways, the concepts of entrepreneurship and market orientation are related. The idea that marketing practitioners should strive to understand customers and act on this understanding to develop products and services that satisfy customer needs (Narver and Slater 1990) is similar to Rouse's view of entrepreneurship as directing the flow of resources to meet customer needs (1949). Marketers and entrepreneurs are both trying to uncover opportunities in the marketplace so that they can enact tactics to exploit these opportunities. Shane (2000) argues that anyone who discovers and exploits opportunities is in fact an entrepreneur. Thus, in this dissertation, the term “entrepreneur” and “managers” are used interchangeably.

The idea that gaining understanding of customers and competitors will lead to increased firm performance seems a bit simplistic (Harris 2002). Missing from the market orientation literature is a detailed explanation of how the information coming into the organization can be

transformed into useful intelligence that provides insight into what exact actions should be taken. Some MO researchers have openly acknowledged that entrepreneurial thinking may be valuable to gain a better understanding of MO's relationship to performance (Sinkula 1998).

This focus on the cognitive aspect of opportunity exploitation calls for focus on the individual manager level. In reality, firms do not recognize opportunities in the market, people do. Therefore, in order to gain some insight into how people in firms exploit opportunities, we need to look at the cognitions of individuals or small groups. This is problematic for market orientation researchers since market orientation research is overwhelmingly investigated at the organizational level. However, the entrepreneurship research focuses on the individual or group level. Combining the techniques used to investigate opportunity recognition by traditional entrepreneurs with research focused on marketing oriented constructs should prove beneficial in moving the market orientation literature forward.

Market orientation provides the "what" of market opportunity discovery. In other words, it specifies what types of experiences and knowledge, as well as the types and amount of information, are necessary to discover ways to better serve markets. Recent advances in entrepreneurship provide the "how" – how new information and old experiences are combined to make entrepreneurial discoveries by managerial teams. As noted in the introduction, this is especially relevant to the notion of MO and its link to organizational performance because increased information flow about customers and competition is unlikely to lead to innovations or firm performance without some transformational process, opportunity recognition.

In the remainder of this chapter, the market orientation and entrepreneurship literatures are used to provide construct definitions. Following the tenets of Kirzner's theory of entrepreneurial discovery, a conceptualization of the market opportunity recognition mechanisms

is provided. The combination of the various streams of research provides the justification for the conceptual model and hypotheses.

QUALITATIVE RESEARCH

As illustrated above, a wealth of market orientation and entrepreneurship literature exists yet the specific details of market information interpretation and entrepreneurial discovery are scant. Several researchers have specified conceptual models of market opportunity recognition processes but each model draws on a myriad of theoretical perspectives which often result in contradictory models (Ardichvili et al 2003). Therefore, in order to gain a better understanding of the market opportunity recognition phenomenon, qualitative inquiries were conducted. The understanding and insight gained from the qualitative data was critical in addressing research objectives one and two outlined in Chapter 1.

The collected qualitative data was used in two ways. First it was used to confirm common suppositions of past entrepreneurial discovery research. In this light, the findings of the qualitative inquiries were constantly compared to the extant literature so that comparisons and confirmations could be made. Second, the data was used to explore new, alternative conceptualizations of market opportunity recognition mechanisms constructs and to gain a better understanding of the construct relationships that form the market opportunity recognition mechanisms. This exploratory aspect of the qualitative research was used to guide conceptual definitions, construct operationalization and hypotheses development.

Data Collection

Two types of data were collected for the qualitative aspect of the dissertation which included participant interviews and participant observation. Following Strauss and Corbin

(1998), the initial review of the market orientation literature and entrepreneurship literature was used to guide interview participant selection. Based on the literature, participants sought for interviews included managers whose main charge is to identify opportunities in the marketplace as well as entrepreneurs who had successfully identified and exploited one or more market opportunities. In total, five interviews were conducted with participants who met this criterion. The details and characteristics of these interview participants are found in Appendix A-1. In addition to field interviews, the researcher interviewed 10 (five undergraduates and five masters of business administration students) students engaged in the *Marketplace* simulation which was used in the empirical portion of the dissertation. These interviews took place in a focus group format.

During the interviews, participants were asked to recall a specific opportunity that had been identified and exploited by the participants (and their colleagues where applicable). From this initial starting point, a grand touring approach was used to explore the events and processes that transpired leading up to the opportunity identification and exploitation stages. The interview guide used in these interviews is found in Appendix A-2. Each interview was audio recorded and some documentation of the recalled events was presented to the researcher during some of the interviews. The researcher also took hand-written notes during the interviews to note any significant observations about the interviews not captured by the audio recordings. Each interview lasted approximately forty-five minutes.

Observation data were collected by observing teams engaged in the *Marketplace* simulation. These teams were comprised of 19 professional MBA students at a large mid-western public university. The researcher collected observations of these students as they made strategic and tactical decisions across multiple decision periods. The researcher made no

distinction between high and low performing teams prior to collecting the data. Data was collected from four teams competing in two separate simulated industries. The method of data collection included both video taping and audio taping teams. In total, 15 hours of video and 45 hours of audio were generated. Finally, during the observations, various documents used by the team in the course of competing in the simulation were collected and used in the analysis of the data.

Data Analysis

Despite the confirmatory nature of the qualitative research, this qualitative aspect of the dissertation followed a grounded theory methodology. As Strauss and Corbin (1998) point out, grounded theory methodologies are utilized when *a priori* theory is insufficient in organizing concepts into explanatory schemes. Grounded theory is also appropriate for analyzing the qualitative data because the methodology is well suited for phenomenon that involve social processes that result in specific processes and actions (Creswell 2003). Obviously, the notion of market opportunity recognition mechanisms fit this criterion as it involves interfunctional teams engaging in interpretation of market data in route to forming corporate responses to changing conditions.

The main analytical techniques prescribed by Straus and Corbin (1998) used in the present study were axial and selective coding. Selective coding was used to identify the various aspects of interpretation as illustrated by the interview participant comments or in the observation of simulation participants. Subsequent axial coding was used to identify the relationships between the dimensions and sub-dimensions identified in the selective coding stage. Finally, once the relevant constructs and construct relationships were specified, the data

was reviewed again in an attempt to validate the relationships and produce a holistic picture of the processes involved in market opportunity recognition mechanisms.

The trustworthiness of the findings and conclusions reached as result of the qualitative data analyses was assessed along various dimensions as prescribed by various authorities on qualitative research (Flint and Mentzer 2000; Lincoln and Guba 1985; Wallendorf and Belk 1989). These dimensions include credibility, transferability, dependability, confirmability, integrity, fit, understanding, generality and control. The various methods used to insure trustworthy findings in the qualitative research process are found in Appendix A-3.

MARKET OPPORTUNITY RECOGNITION MECHANISMS

Opportunity recognition has been viewed as a key step in the entrepreneurial process and in fact some would argue it is the step from which all other marketing and management activities follow (Venkataraman 1997). In this section, a brief review of the opportunity recognition literature is presented followed by a modified conceptualization of the mechanisms at work in market opportunity recognition using the extant opportunity recognition, team cognition and creativity literature as well as the insights gained from the qualitative research process.

Using Baron's (2006) definition, market opportunity recognition mechanisms are defined as *the cognitive states and process that individuals or groups use to conclude that they have identified an opportunity in the marketplace*. Cognition is a term generally used to describe the processes by which various inputs are transformed, elaborated and used (Cowan 1986; Fiske and Linville 1980; Mitchell et al. 2002; Neisser 1967). While a seemingly simple definition of market opportunity recognition has been presented, the cognitive mechanisms employed in market opportunity recognition are quite complex.

Early works on market opportunity recognition were rooted firmly in economics and posited that disequilibrium in the market was the sole source of opportunities (Kirzner 1979). For example, changes in the demographics of the market or some new technological development that have the potential to change the types of products desired by consumers. The successful entrepreneurs were those that discovered these imbalances in the market (Kirzner 1979). This view, known as the event perspective of opportunity recognition, assumed that the key to success was simply discovering the imbalance and that the process for exploiting the imbalance was obvious to the entrepreneur. Thus, as posited by Hayek and other Austrian Economists the main impetus to entrepreneurial discovery was information asymmetry (Kaish and Gilad 1991; Kirzner 1999; Shane 2000).

Subsequent researchers criticized the view that opportunities appear fully formed (Lumpkin, Hills and Shrader 2001). From this criticism, a second camp of opportunity recognition emerged that focused on the cognitive complexities of actually formulating the appropriate actions to take in response to a given imbalance in the market. Long and McMullan (1984) were the first to propose a multi-stage model of market opportunity recognition which included the pre-vision stage, point of vision stage, opportunity elaboration stage, and the decision to proceed. From this early multi-stage model, other researchers have followed suit building mainly off of works in creativity to create various combinations of variables involved in market opportunity recognition (Bhave 1994; De Konig 1999; Gaglio and Taub 1992; Lumpkin, Hills and Shrader 2001; Ward 2004). Rooting these models in creative thinking is not surprising given that novelty and usefulness are the crux of creative thinking, which parallels nicely the ideas of entrepreneurship and opportunities discussed in previous sections. In contrast to the event perspective of market opportunity recognition, these multi-staged models downplay the

importance of awareness of market imbalances, relegating this concept to one of the multiple stages in the market opportunity recognition process. The majority of focus in these models is on the process used to develop the means to exploit a given imbalance.

This dissertation attempts to build a conceptualization of market opportunity recognition that combines both camps. A review of the literature using both the event perspective and the creative thinking perspective as an explanation of market opportunity recognition finds that market opportunity recognition is not a stand-alone construct but actually a set of interrelated constructs whose interactions result in the discovery and exploitation of market opportunities. The first dimension involves the cognitive states the manager(s) use in detecting and understanding important elements of the external macro-environment inline with the event perspective (Gaglio and Katz 2001). The second element is the cognitive processes of creative thinking that allows the manager(s) to formulate a list of possible ways to exploit a market imbalance and to evaluate the best option (Mitchell, Friga and Mitchell 2005; Shane and Venkataraman 2000). The third and final element is the level of agreement that exist among the team in terms of the best opportunities to pursue and the means by which opportunity exploitation should be realized. In sum, these constructs found in the market opportunity recognition mechanisms can be categorized as management team situational awareness (SitAware), management team creative problem solving (CPS), management team strategic agreement (TSA) and management team tactical agreement (TTA) respectively with a brief discussion of each to follow.

Management Team Situational Awareness

Management team situational awareness is thought of as the cognitive processes by which individuals and groups notice changes in the environment. In this dissertation, awareness is defined as the *management team's ability to perceive, comprehend and predict elements in the environment, with special sensitivity to maker and user problems and unmet needs and interests* (Endsley 1995). Gaglio (2001; 2004) describes awareness as the result of cognitive process by which individuals or groups develop accurate perceptions about events in the market (also known as veridical perception). A main point here is that awareness is focusing attention on the macro-environment. Smith and Hancock (1995) state that awareness exists at the interface between the agent and its environment which accounts for the external, “big picture” emphasis needed in the opportunity recognition process. This awareness is often conceptualized as the foundational element of market opportunity recognition mechanisms (Gaglio 2004).

With the exception of Gaglio's work (2001; 2004), few entrepreneurship researchers have explored the idea of awareness beyond saying that it is an important impetus to the opportunity recognition process. However, research on cognition in other disciplines provides a parallel and detailed look at this concept. For example, the literature on situational awareness (synonymous with “awareness” herein) in the aviation industry is extremely helpful in understanding this aspect of market opportunity recognition (Adams, Tenney and Pew 1995; Cooke et al. 2000; Endsley 1988, 1995; Salas et al 1995; Smith and Hancock 1995). For example, Endsley's (1995; 2007) work in flight training defines situational awareness as the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future. Each of these individual dimensions is reviewed below.

Perception

In this aspect of awareness, individuals or groups are going through the cognitive exercise of noticing elements in the marketplace (Ardichvili et al. 2003; Endsley 1995). While often thought of as an unconscious process, perception manifests itself in managers' ability to recall facts about the marketplace that have both direct and indirect effects on the business. It is thought of as the state of knowledge about the environment that managers' have at any given point of time (Sarter and Woods 1991). One example of this is a managers' ability to recall which competitors are investing heavily in R&D technology and as well as the types of projects these competitors are working on.

Management team situational awareness is developed through a state of constant preparation such that individuals or groups are constantly expanding their knowledge base so that problems or changes in the field of interest can be noticed (Kao 1989; Lumpkin and Lichtenstein 2005). This knowledge expansion allows individuals or groups to build broad classification schema. When information does not fit into any one particular schema, then a discrepancy is perceived and further cognitive processes may be triggered (Cowan 1986; Gaglio and Katz 2001).

Comprehension

The comprehension dimension of awareness is defined as the process of forming a holistic picture of the environment by integrating elements in the environment and understanding their meaning (Endsley 1995; 1997). The main point here is that simply recalling information about the external environment is not enough to label the management team "aware". Management team situational awareness is not only noticing elements in the marketplace but also being able to

connect the dots – noticing the links between events or changes in the marketplace and recognizing the changes as significant even if the causes and consequences are not yet identified. The perceptions of the elements are combined together to form a meaningful picture of the environment. Scholars have argued that complex and changing schemas of aware individuals or groups allow them to make connections between seemingly unrelated events in the marketplace and /or to recognize patterns in the marketplace (Baron and Endsley 2006; Dutta and Crossan 2005). An example of comprehension is when a management team realizes that it has a significant competitive advantage over certain competitors based on the team's perceptions of competitors' decreases in manufacturing capacities and recent price increases.

Prediction

Kirzner (1997) and others have proposed that successful entrepreneurs must not only detect patterns in the marketplace but that they interpret the patterns differently and draw different conclusions than the competition. What he meant was that awareness is also reflected in managers' ability to use perceptions and comprehensions to anticipate the future state of the environment (Endsley 1995; 1997). Here, managers begin to use information to develop different views of the world based on either new information or on seeing old information in a new light. Endsley (1995) formally defines prediction as the ability to project the future states of the elements in the environment, at least in the near term. Here the emphasis is on the managers' state of knowledge about the environment going forward. For example, through basic knowledge about R&D efforts of competitors and comprehending the meaning of these changes, managers reach a state where they can predict which competitors are formidable threats going forward and which are likely to fall to the way side.

In aggregate these states come together in working memory as the manager engages in strategic and tactical decision making. However, as noted by situational awareness researchers, over time these states begin to take root as managers become expert in their particular areas. As more and more environmental elements are perceived, comprehended and projected, experts begin to see patterns that become engrained into long-term memory that allow them to recall important elements in the market even after actively working on managerial decision making (Endsley and Garand 2000). This storage of situational elements in long-term memory also contribute to experts being more apt to make fine grained categorization of different cues in their environments as opposed to novices who tend to lump cues into large, often meaningless categories (Endsley 1997).

Qualitative Support for the Situational Awareness Construct

The qualitative data gathered for the dissertation supports this three dimensional view of management team situational awareness. For example, Dave J. talked about the importance of building a holistic picture of the market conditions when he discussed the use of a innovation summit held jointly between his firm and other electronic companies from other industries. Dave states that...

“We have an innovation summit where we get together with other companies from a range of industries to discuss the latest developments in our markets and technology (Perception and Comprehension) and where the technology is going (Prediction).”

Likewise, successful teams engaged in the *Marketplace* simulation spent considerable time and effort ascertaining the state of the market *before* moving into any sort of decisions

making about possible actions. For example, *I-Comp*, the highest performing of all observed teams, had a formal process where each functional manager presented his / her view of the market pointing out significant elements in the market. From each manager's market assessment, the team discussed how this was going to impact the future of the market illustrating the prediction component of management team situational awareness. Interestingly, *I-Comp*, would also fill in a spreadsheet that the created to paint a picture of the market and the team updated this spreadsheet prior to any strategic or tactical decision making. Below is a small sample of these situation discussions...

VP of Marketing... "If you look at it, just to kind of summarize we've got a decent position, we've seemed to have one of our brands positioned nicely. We've got the best brand, Sapphire is the best brand in Innovator... What I kind of deduce from this was that, the big differences that I saw was that our Granite was just positioned a little too high I think."

VP of Sales... "Yeah but we also have to consider what the competition is going to do. These brand ratings are moving targets because (other team) is going to be making changes to their brand as well. What do you think the (other team) is going to do going forward? Will they pursue the Innovator segment?"

The VP of marketing's comments reflect the perception of brand ratings of the firm's products and the "what I deduce from this" comment illustrates the VP's attempt to comprehend the meaning of the ratings. The "moving targets" aspect illustrates that the team was cognizant

of the changes that occur and that the team needs to make predictions about where the market was going. Other teams in the observation data spent very little time discussing these aspects of the market informally and none of the other teams had a formal process in place for building team situational awareness.

In summary situational awareness is an important aspect of the market opportunity recognition mechanisms. Situational awareness is reflected in the managers' perceptions of environmental elements, comprehensions of these elements and projections of these elements in the environment going forward. From this cognitive state, managers are able to discern potential weakness in the market that could be exploited. In other words, the management team situational awareness aspect of market opportunity recognition mechanisms gives the manager insights into current or soon to be resource misallocations. Identifying these resource misallocations is an intricate part of the opportunity recognition process (Kirzner 1999). Once these resource misallocations are identified in the marketplace, management teams can engage in the process of matching resources at their control to address the market deficiencies in hopes of financial gain. The process for developing potential means of exploiting the deficiencies is covered in the following section.

Management Team Creative Problem Solving

If management team situational awareness is the cognitive state used to notice changes or misallocations of resources in the marketplace, management team creative problem solving is the process of formulating potential responses to these events. Past research on creative problem solving has conceptualized the construct as two dimensions; divergent and convergent thinking. Formally, divergent thinking is defined herein as *the cognitive processes used by managers to*

clearly define the problems presented to the management team and to explore response possibilities. Here the processes are akin to the problem construction and problem solving processes outlined in the cognitive literature on creative thinking (Mumford 2001; Runco and Chand 1995). Managers must first develop a clear idea of the issues based on the firm's position given the future projections made in the situational awareness dimension of market opportunity recognition mechanisms. Then they must be able to formulate a battery of potential responses based on a number of different perspectives. In creative problem solving, the focus of the team shifts from the external environment to an internal orientation.

The first aspect of the divergent thinking process is the problem construction. In this dissertation, problem does not necessarily connote a negative situation. Quite simply the term problem is used to represent the goal and objectives of the response development effort (Mumford, Reiter-Palmon and Redmond 1994). Thus, problem construction is the process of defining these goals and objectives. Using the example in the awareness section, a management team may discern that due to increased R&D efforts, a relatively weak firm is becoming a formidable competitor. Using projection, aware managers would come to the conclusion that this competitor will garner the majority of the market share if left unchecked. In the problem construction phase of discovery, the management team must accurately define the goals and actions necessary to avoid this potential threat.

The cognitive processes employed to accurately define the problems associated with this threat include the generation of multiple problem representations to be considered. Research shows that simply gravitating to the most "obvious" problem, perhaps a lack of R&D spending in this case, is not the ideal mental heuristic (Mumford 2001). Instead, creative thinkers actually spend a great deal of time thinking through the true nature of the problem by generating several

perspectives on the problem at hand before moving on to response ideation processes (Redmond, Mumford and Teach 1993).

Perkins (2000) illustrates a good example of the importance of problem construction by discussing NASA's process of developing a craft capable of returning to Earth from space. NASA engineers were acutely aware that the friction between a falling object and the atmosphere could produce extreme temperatures and thus jumped hastily to defining the problem as needing materials that would be impervious to high levels of heat. However, their problem solving efforts were futile in that they could not find a single material that could withstand that sort of heat without burning away. Only after generating an alternative problem representation were the engineers able to develop a successful solution. NASA engineers reframed the problem from one where a material had to withstand the heat to a problem of keeping the astronauts cool. By using this new problem representation, the engineers formulated a re-entry plan that brought the craft back to Earth at an angle reducing the amount of friction between the craft and the atmosphere. In addition, the engineers realized that they did not need a material that was burn resistant; they needed a material that would slowly release from the craft as it burned, pulling the heat out and away from the craft. Like the NASA engineers, creative thinking requires that managers develop and consider multiple representations of the problem facing the firm.

A second aspect of the divergent thinking process is to develop a set of responses for the respective problem representations. This process, known as solution formulation in the creativity literature, is similar to the problem construction process. Here managers, develop multiple means of addressing a given problem representation. In divergent thinking, managers attempt to develop as many problem representations and responses as possible. These acts of discovery involve associative and combinative thinking whereby individuals or groups use cognitive

processes to construct varied sequences of actions and outcomes in hopes of developing multiple sets of possibilities (Kahneman 1995).

Previous research has found that successful individuals generate more counterfactual scenarios than unsuccessful individuals in problem solving exercises. The success of these individuals is attributed to the notion that when people generate different forward looking casual sequences, they are actually testing different relationships by creating different combinations of causes and potential outcomes (Farris and Revlin 1989). By generating a high number of sequences, entrepreneurs are expanding their options for problem solution.

Another related form of divergent thinking is conceptual combination. In this cognitive exercise, individuals or groups merge concepts (antecedents or consequences) that were previously thought to be unrelated. Apparently, the process of interpreting the novel combinations of unrelated elements yields greater insights than had the elements been considered in isolation (Gaglio 2004; Mumford 2001)

These reflective and forward looking cognitive exercises result in a shift in mental models that allow the individuals or groups to see the interactions between the environment and potential responses differently. Often, this process yields that “ah ha” or eureka moment when elements in the market place and potential responses seem to fit together in ways not previously seen (Lumpkin and Lichtenstein 2005). This sudden convergence of causes and possibilities is brought on by the new means-ends relationships revealed through the cognitive processes in this discovery phase. However, these insightful moments occur frequently through the discovery process and are not likely to be single events.

It is important to acknowledge that the insights produced by the cognitive shifts in divergent thinking are merely ideas of ways to solve problems in the marketplace. Generating a

broad range of means-ends relationships (ideas) is necessary but not sufficient in the market opportunity recognition process (Guilford 1950; Mumford 2001). Once these ideas are generated, they must be put through an evaluation process. This evaluation process is known as convergent thinking and is a critical component of creative problem solving. Convergent thinking is defined as *the cognitive process used by managers to assess the workability of ideas, the resources needed to implement the ideas and the value of the ideas* (Lumpkin and Lichtenstein 2005). Ultimately, the goal of this cognitive exercise is to identify the best means-end relationship that matches resources to market conditions so that profits can be generated (Ardichvili et al. 2003). Several studies have shown that an often overlooked key to creative problem solving is the cognitive process of idea evaluation (Mumford, Baughman and Sager 2000; Runco and Chand 1994; Simonton 1998). Closer scrutiny of the cognitive science literature on creative thought indicates that this evaluation stage is actually comprised of two key processes: the elaboration process and the valuation process.

During elaboration, individuals begin to construct a mental map linking physical, tangible resources with the ideas developed in the discovery phase (Ardichvili et al 2003). This aspect of opportunity evaluation represents a due diligence of sorts as people begin to develop plans to bring certain means-ends relationships to fruition. As these implementation processes are mapped out, conceptual foresight is used to imagine possible downstream effects of the idea (Mumford 2001; Mumford, Zaccaro, Harding, Jacobs and Fleishman 2000). The elaboration process allows for the refinement of the idea based on barriers to implementation and key intervention points along the way to making the idea a reality. In short, the elaboration process involves “legitimacy seeking” as entrepreneurs develop the viable options for bringing an idea into reality (Lumpkin and Lichtenstein 2005). A final point on the elaboration process is that

creative thinkers frequently change the criteria used to measure an idea's importance and by which to judge future success (Mumford 2001). For example, moving from a purely profit achievement criteria for an idea to criteria involving the idea's potential to disrupt the market (Schumpeter 1942).

The second aspect of convergent thinking is the valuation process. During the valuation process, individuals must ask themselves whether a given set of means-ends relationships are monetarily valuable and worthy of pursuit (Csikszentmihalyi 1996; Lumpkin and Lichtenstein 2005). Here, individuals must undertake the process of assigning costs of acquiring and using resources to initiate the new means-ends relationships. In addition, the benefits of the idea must be determined so that they can be weighted against the costs to determine some objective level of the ideas explicit value.

Qualitative Support for Creative Problem Solving

Again, support for this conceptualization of creative problem solving is found throughout the qualitative data collected for the dissertation. Chris M., an innovation manager for a consumer electronics firm specializing in pet care talked about the issues related to the changing landscape of pet care and how the market is beginning to take pet care as seriously as healthcare for humans. As an illustration of the divergent thinking process, Chris talks about the various problems this trend creates in the pet care market...

"We had a discussion about pet health and marketing told us that pets are getting more obese and that owners are going to be spending more on money related to this. So my group started thinking through the different problems and thought about OK, so how do you weigh a pet? How could owners track their (pets') weight?"

Later in the interview, Chris talked about the shift from problem finding to problem solving which is illustrative of the combinative and analogous thinking in divergent thought processes.

“If a pet is lost what are different ways to return it to its owner. Micro-chipping is one way. Working directly with the pounds is one. Using simple id tags is one way. And after looking at the auto industry, we realized that GPS and low-jack is one way... You need lot’s of combinations of things in order to come with good solutions.”

Tom M. an entrepreneur who started a local software firm provides an example of the convergent thought processes critical in creative problem solving. Tom’s comment illustrates that managers must balance the financial valuation aspects of creative problem solving with the confirmation of the reality that pursuit of an identified opportunity would yield success.

“I spent a whole day making some preliminary (financial) calculations and I began to share the idea with friends who helped me verify the economic factors and technical feasibility. You can’t get decoupled from the realities of the market.”

The observation data collected from participants engaged in the *Marketplace* simulation is pregnant with examples of creative problem solving as well. While the exact quotes supporting the CPS dimensions are highly fragmented and difficult to report, it can be said that the more successful teams in the observation data exhibited both dimensions of CPS where as unsuccessful teams seemed to employ either divergent thinking or convergent thinking but not

both. This supports the bi-dimensionality of the CPS construct as found in the creative problem solving literature.

Management Team Strategic and Tactical Agreement

The third and final component of market opportunity recognition mechanisms is management team agreement. The previous two components, awareness and creative problem solving, are deeply rooted in an “individual cognition” perspective. In other words, when discussing situational awareness and creative problem solving at the team level, concepts of individual cognition are simply aggregate to represent the cognitions of the group as a whole (West 2007). Yet unlike individuals, groups must develop a shared mental model of how to move forward with actions that are result from the awareness and problem solving components.

As illustrated by previous research, this agreement is necessary at two levels. First, the management team must agree on the ends that should be achieved based on a given set of circumstances. These ends are typically viewed as the strategic direction of the firm (Bourgeois 1980; Ginsberg 1990; West and Meyer 1998). Therefore, the dissertation defines *management team strategic agreement as the degree to which the managers of a firm agree on the strategic direction of the firm necessary to succeed in future periods.*

Qualitative Support for Strategic Agreement

By analyzing the observation data, it becomes apparent that successful teams seek agreement on the strategic direction of the firm before moving on to tactical decision making. The following supporting conversation occurred between *I-Comp*'s VP of Manufacturing and VP of Marketing.

VP of Marketing – “Well here’s the deal, just follow me here and see if you agree... (gives rationale behind strategic direction choices available to the team)... So, we kinda need to make a choice here on which direction we want to go (in relation to segments to be pursued).

VP of Manufacturing – “I really liked what you said as far as growing, because we’re not gonna get the Traveler segment, it doesn’t look like because that’s left now.. so the Work Horse/Cost-cutter sounds good...I guess that’s what I had in my mind too.

Managers of a firm must also develop a shared mental model of the means to achieve ends in addition to agreement on the ends themselves. Past research on the social aspects of entrepreneurship has conceptualized these means as the actual tactics or actions the founding team takes in order to implement a desired strategy (Bourgeois 1980; Ginsberg 1990; Perry and Smith 1995; West 2007; West and Meyer 1998). To account for this aspect of management team agreement, this dissertation defines management team tactical agreement as ***the degree to which the managers of a firm agree on future actions necessary to succeed in future periods.***

Qualitative Support for Tactical Agreement

The tactical agreement was prevalent in the qualitative data perhaps more so than the agreement on strategic direction. Malcolm W. the head of new product engineering at a major industrial equipment manufacturing illustrates this point when talking about his unit’s relationship with the sales organization. Malcolm said...

“We are in a constant struggle with the sales group. We tend to see eye to eye on the types of markets we should going after. Unfortunately we can never seem to get on the

same page on the best way to get the job done. We want to use technology that is readily available and they (the sales group) seem to want to use technology that is untested. It's like they are off in la-la land...at the end of the day, this makes us look bad in front of the customer."

Malcolm's comments illustrate the importance of tactical agreement by stating that the two groups "see eye to eye" on the strategic direction of the firm but can't "get on the same page" when it comes actually implementing tactics that make these strategies successful. In the same vein, the observation data illustrates the importance of tactical agreement in that many of teams seem to make decisions to simply check certain tasks off of the team's "to-do list" while other, more successful teams, made a concerted effort to reach an agreement on the appropriate tactics. This agreement was sought from all members of the team regardless of the functional areas being discussed.

THE RESPONSIVENESS ASPECT OF MARKET ORIENTATION

The original work of Kohli and Jaworski (1990) included responsiveness as a dimension of market orientation. Likewise, Narver and Slater (1990) had a response component in their operationalization of the interfunctional coordination construct. However, as market orientation research has progressed, scholars have made the case that responsiveness does not fit into the conceptualization of MO due to the fact that information processing, sense-making and decision making are related but unique constructs (Hult, Ketchen and Slater 2005; Sinkula 1994).

Justification for removing the “responsiveness” dimension from market orientation was born from the work of these scholars. Researchers have gone so far as to posit that explicit responses are not needed for learning to have occurred (Huber 1991; Sinkula 1994). This seems logical as gaining insight about events in the market place does not always call for a response. In some cases the responsiveness may occur only after additional insights are generated later in time. Also, insights from the market may reinforce current courses of action and thus do not always warrant a response. With these nuances in mind, this dissertation takes a slightly different angle on how to define and ultimately measure the responsiveness construct. An alternative view of responsiveness is presented below, and in doing so, it is proposed that responsiveness needs to be reevaluated in market orientation research.

Responsiveness has been traditionally defined as the “action taken in response to intelligence that is generated and disseminated” (Kohli and Jaworski 1990). Most market orientation studies rooted in the Kohli and Jaworski (1990) conceptualization of market orientation have simply taken the definition of responsiveness at face value. This definition focuses on the two specific behaviors of responsiveness. The first behavior is designing the response, which primarily includes planning marketing activities. The second behavior is implementation behavior - those behaviors involved in executing the strategy, such as developing new products, refining marketing communications, or adjusting pricing and distribution structures.

Interestingly, market orientation research has consistently used this conceptualization, and the subsequent operationalization of speed and planning, as the impetus for organizational performance. However, this seems to extend the “black box” of market orientation literature in that this link has lacked sufficient theoretical justification and in some ways seems illogical. For

example, it seems plausible that the business world is full of companies that use the information circulating within the company to plan and implement specific resource allocations without financial success. Simply, planning and acting is not enough to define responsiveness. These arguments show that simply defining responsiveness as action does not go far enough in conceptualizing what it means to be responsive. Likewise, it has been argued that financial performance is not enough to capture the idea of responsiveness, considering that firm performance is easily influenced by factors outside of the market oriented processes within the firm (Sinkula et al 1997).

Returning to Austrian economics helps to reconcile the ambiguity in the conceptualization of responsiveness. For example Mises (1949) defined entrepreneurship as the *action that successfully directs the flow of resources toward the fulfillment of customer needs*. From this simple definition of entrepreneurship come some important insights into what it means to be responsive. Mises' definition accounts for the behavior of responding via the word "action". Traditional market orientation research has focused on the action side of responsiveness in the frequently used operationalization mentioned above. However, Mises' definition goes further by stating that the action needs to successfully direct resources to customer needs. This aspect of accurate resource allocation has not been directly addressed in past market orientation literature.

This resource alignment parallels the notion of fit from contingency theory often used in strategy literature (Dess, Lumpkin and Covin 1997; Naman and Slevin 1993; Olson, Slater, and Hult 2005; Venkatraman 1989; Venkatraman and Prescott 1990; Vorhies and Morgan 2003). Strategy scholars have become increasingly focused on the importance of fit between the firm's strategies and tactics and the conditions of the external environment (Venkatraman and Prescott

1989). Studies in this area provide empirical support for Kirzner's (1979) contentions about resource alignment by testing the fit between strategy and the environment and the subsequent impact on firm performance (Vorhies and Morgan 2003). This ties in with the Von Mises (1949) notion that resources should flow to customer needs, as well as the tenets of the marketing concept from which market orientation is derived.

Thus in this dissertation, the traditional view of responsiveness is re-conceptualized using a fit perspective. Formally, responsiveness is defined as *the degree to which the management team effectively aligns resources of the firm to fit the market environment*. Thus, two separate dimensions of responsiveness are used in the conceptual model which are strategy-to-market fit and tactical alignment. Once misallocations of resources have been identified in the market, entrepreneurs must re-evaluate broad strategic goals to ensure that the firm is moving toward these misallocations of resources. This positioning of the firm strategically is known as strategy-to-market fit which is formally defined as *the alignment of a firm's strategic initiatives given its strengths and weaknesses to market conditions* (Miller and Friesen 1986; Porter 1980; Wright 1987). Given the presence of situational awareness and creative problem solving processes and if the management team agrees on the strategic direction of the firm, then the strategic goals of the company are likely to be aligned with market conditions. In addition to the fit between the strategic initiatives of the firm and market conditions, firms must also make fine grained tactical choices which are in line with the given strategy (Vorhies and Morgan 2003). This is known as tactical alignment which is defined as *the degree of alignment between the focal firm's resource allocation and an ideal resource allocation profile that produces superior performance by appropriately arranging resources to implement a particular strategy*.

Marketing Efficiency

The theory of entrepreneurial discovery posits that ideal responses are those that effectively meet customer needs and that do so in a way that rewards the firm with above normal financial performance (Hayek 1945; Jacobson 1992; Kirzner 1997). The theory goes on to posit that it is possible to meet customer needs but to do so in a way that does not optimize profitability. Thus, other entrepreneurs are likely to enter the market in order create the same level of satisfaction as the original entrepreneur, but also accomplish this mission with less “waste”. This notion of customer satisfaction at minimal levels of waste is captured in the idea of response efficiency (Kirzner 1999). Herein, response efficiency is defined as *the management team’s ability to respond to customer needs and wants in a manner that uses resources efficiently.*

HYPOTHESES DEVELOPMENT

The following section develops the conceptual model found in Figure 3. Based on the theory of entrepreneurial discovery (Kirzner 1997), the relationships between the constructs are discussed and formal hypotheses presented. This Kirznerian view of entrepreneurial discovery theorizes that action is the result of unique cognitive states and processes that allow the entrepreneur to detect changes in the marketplace or to view old information about the marketplace from a unique perspective (Alvarez and Barney 2002; Day and Nedgandi 1994; Kirzner 1990; Smith and Di Gregorio 2002). The combination of the market opportunity recognition mechanisms as depicted in Figure 3 gives the entrepreneur(s) the ability to detect

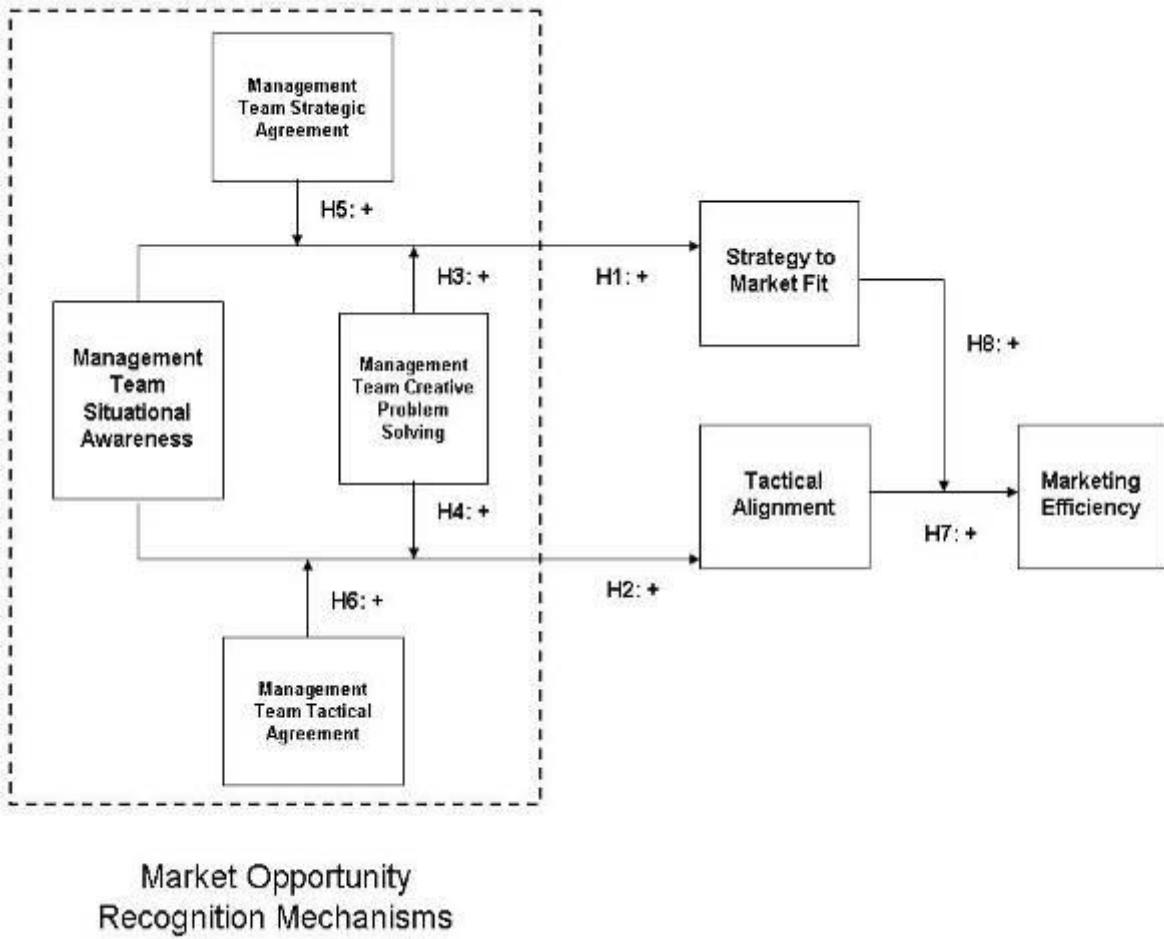


Figure 3 - Theoretical Model

opportunities in the market place and to formulate a timely, effective means of exploiting these opportunities.

Market opportunity recognition mechanisms play an important role in being able to formulate marketing actions that fit the conditions of the marketplace resulting in accurate responses. Per the Austrian theory of entrepreneurial discovery, the process of assessing the goings on in the marketplace should lead to an increased accuracy in matching resources to the environment. Before appropriate actions can be taken, managers must recognize the possibility that action may be necessary (awareness), determine all the possible cause and effect relationships in the course of problem solving and determine the best actions to take in order to exploit the focal opportunity (creative problem solving) and reach agreement of the appropriate means and/or ends to use in future periods (strategic and tactical agreement).

Hypotheses 1 and 2

Kirzner's theory of opportunity recognition suggests that entrepreneurs must be able to align both their goals and their actions with a given set of market conditions so as to take advantage of misallocations of resources by both the focal firm as well as competitors in the market. Through this management team situational awareness, managers are able to see the big picture which results in their ability to identify appropriate ends or goals that should be pursued based on the resources available to them and the misallocations of resources in the market. Without awareness, entrepreneurs tend to misinterpret or altogether miss changes in the marketplace, which means they address the wrong market issues or they fail to act at all (Mumford and Gustafson 1999). In business terminology, this means that situational awareness

allows entrepreneurs or managers to see the holes in the market, specifically the ones that their firms may be able to exploit resulting in the development of new or revised strategic initiatives.

In addition to the big picture view of appropriate ends that may be pursued in the market, management team situational awareness also provides insight into the appropriate means by which to achieve the identified ends. Situational awareness gives the management team an understanding of the firm's position relative to the market. Strengths and weaknesses are formulated through the comprehension aspect of situational awareness which helps managers develop an inventory of resources to be utilized in the achievement of the strategic initiatives.

In short, management team situational awareness provides the big picture view of the market which guides selection of strategic initiatives that may be pursued and some insight into the capabilities that may be used to implement these initiatives. Thus,

H₁ – Management team situational awareness is positively related to strategy-to-market fit.

H₂ – Management team situational awareness is positively related to tactical alignment.

Qualitative Support for H1 and H2

The qualitative data gathered during the early stages of the dissertation research support H1 and H2. When making comparisons of top teams to those that struggled, the qualitative data indicates that members of successful teams are much more likely to back up their arguments for certain strategic and tactical initiatives with information about the market situation. Most of the

time the data referenced in these discussions was flowing from top of mind. In contrast, other unsuccessful teams seemed to get bog down in the data available to them, never making the connections between the data and its meaning for the firm. This resulted in many decisions be made with statements such as “I just think this is what we should do” with little or no reference to market data. Finally, the researcher had access to all of the data for each of the quarters that the teams were observed. Upon analyzing the comments of the successful and unsuccessful teams, it was clear that the unsuccessful teams would often cite statistics that were not accurate in the making their decisions further strengthening the argument that situational awareness is a key driver of strategy-to-market fit and tactical alignment.

Hypotheses 3 and 4

Management team situational awareness provides the basic foundation for identifying the opportunities in the market but does not provide the “how” of opportunity exploitation. As mentioned in the definition of market opportunities, managers must creatively use the resources available to them in order to satisfy customer needs and generate a profit. In the absence of divergent thinking found in creative problem solving processes, managers may either mis-identify the relevant problems associated with market elements or they focus on only the most “logical” or “frequent” means-ends relationships in determining ways to solve resource allocation problems (Kiesler and Sproull 1999). The result of this short cutting of the market opportunity recognition mechanisms is that managers may be aware that resources are being misallocated by firms in the industry but they develop misaligned strategic initiatives or inappropriate means for solving problems that leave customers over or under served in some capacity (Christensen, Roth and Anthony 2004). Also, the convergent thinking processes help

managers project the downstream impact of potential ideas so that outcomes can be assessed against pre-established goals. By beginning to think through the actual resources needed to bring a particular solution to fruition, managers are able to think through the impact the solution may have on other aspects of the market. The positives and negatives of these impacts can be assessed and the most effective solution can be chosen. Convergent thinking also assists in determining the most appropriate criteria to use in judging the success or failure of potential actions from the customer's perspective. This process of judging a solution against a range of criteria can improve solution effectiveness.

In short, entrepreneurs who engage in the creative problem solving processes are able to use explicit knowledge gleaned from awareness of the current market situation to develop a more accurate and holistic mental model of the overall direction the firm should take, multiple ways to solve resources allocation problems and more appropriate criteria for determining idea potential in route to identifying the actions necessary to exploit specific opportunities. Thus

H₃ – Management team creative problem solving processes amplify the positive effect of situational awareness on strategy-to-market fit.

H₄ – Management team creative problem solving processes amplify the positive effect of situational awareness on tactical alignment.

Qualitative Support for H4 and H5

Again, the qualitative research of the dissertation was especially helpful in drawing the conclusions summarized in H4 and H5. Below is an excerpt from a conversation among the members of the *I-Comp* team as they prepared to make Q5 decisions...

VP of Sales - I think they are doing something a little different from everybody else; they are going to Europe and Australia.

I-Comp President - So while I-PACC is just doing US right now, Excel and Acuity's got US and Europe?

VP of Marketing - Everybody's got two brands in each of their cities.

President - Trent, you already had New York. Toronto, I take it that's next. Is there anybody competing with Toronto?

VP of Sales - Yeah I think there's somebody building sales offices there. There's somebody manufacturing there but nobody's got a sales office open yet but I think they have to be coming soon.

President - Do we have anything planned in Atlanta right now?

VP of Marketing - A lot of people are looking at Atlanta right now.

President - How many?

VP of Sales - 2 are already selling in Atlanta right now.

VP of Marketing - Yeah they've got 3 people in Atlanta and these guys have got 3 people in Atlanta. We need to think about what would Dell do in this situation (laughing)?

President – Dell would go to the web (laughing). I don't know. I'm kind of questioning how good a job people are doing at analyzing demand and realizing that nobody's there and it's expensive. There are a lot more sales to be had especially wherever we're the leader in area. I'm thinking more like we would do a better job opening offices in Europe and then do Web sales in Canada. How would this plan impact the business?

VP of Sales - Well we didn't know we were gonna make as much money as we did or at least we were betting on conservative so we were only opened a few more sale blocks so in the coming quarters maybe it's gonna hurt us a little bit. We're trying to open some more now I think the stuff in the United States is where we're making the money, but that's where the competitors are at. Where people go next is, I guess, the biggest question as far as whether you try to go somewhere where you think nobody is gonna be or whether you see where people are going and try to make sure you have a presence there. That's kind of what we're seeing right now and where we're heading next for future sales.

VP of Manufacturing - We're gonna expand right? We need more volume flowing through the plants. So I don't care where we go but we just need more volume. We were low on production efficiency because of high capacity but low volume last quarter.

VP of Sales - We're gonna expand, we definitely want to expand now we've got some money but should we try to chase or should we try to plan whether or not we're gonna be first into a market? It's a decision we're going over right now.

This lengthy excerpt illustrates the point that the managers of the *I-Comp* were using the situational awareness that the team had built up in earlier stages of the decision making period to think through the decisions that should be made going forward. The excerpt also points several of the facets of creative problem solving. For example, although he was joking, the VP of Marketing mentioned Dell and how the firm should try to think like Dell in terms of channels of distribution. This is a perfect example analogous thinking found in the creative problem solving processes. Several of the statements of the managers illustrate mental simulations. Finally, the interjection by the VP of Manufacturing illustrates the convergent thinking of creative problem solving in that he applies the “product efficiency” measure to the evaluation of the “expand” or “don't expand” discussion going on among the other team members.

Hypothesis 5 and 6

Work on group decision making emphasizes the importance of agreement on the ends that should be pursued and the means or activities that must be accomplished in route to team success (Bourgeois 1980; Dess 1987; Perry and Smith 2003). Without this agreement, managers may share an accurate picture of the current state of the market and where it is heading yet the

team is disjointed when it comes to prioritizing the strategic initiatives the firm should pursue or employing the appropriate steps to exploit resource misallocations in the market. This is especially important as interfunctional teams must coordinate related but idiosyncratic functional tasks.

In established firms, it takes the sum of the parts to move the company in certain directions within the market. Without agreement on the best strategic initiatives to pursue, the parts become misaligned pulling the firm in different directions. Ultimately this results in misalignment between the firm's strategic direction and the opportunities in the marketplace.

Also managerial teams must have a high level of agreement for the methods that should be used not only in each manager's respective areas but in the functional areas outside of an individual's immediate control (West 2007). Agreement on the functional methods should lead to high levels of coordinated action that is in line with the profiles of top performing firms following similar strategies. Empirical support for a direct relationship between tactical agreement and performance has been mixed (Dess 1997; Homburg et al 1999; Joshi et al 2003). The present study seeks to build clarity around the issue by positing that managerial tactical agreement is not the direct link to positive performance but influences firm performance to the extent that it amplifies the relationship between situational awareness and the alignment of firm resources. This relationship has been alluded to but never studied empirically (Dess 1997).

Simply stated, the alignment of strategic initiatives with market conditions and the proper allocation of resources is a result of a team being both accurate in its mental model of the market situation and the inter-functional agreement on the appropriate methods for moving forward based on this knowledge.

H₅ – Management team strategic agreement amplifies the positive effect of team situational awareness on strategy-to-market fit.

H₆ – Management team tactical agreement amplifies the positive effect of situational awareness on tactical alignment.

Qualitative Support for H5 and H6

The successful teams observed in the qualitative research illustrated the importance of agreement in the decision making process. One of these teams formally referred to the final decision making period as the “collaboration time” which was where each functional manager would review his or her final decisions to be pursued going forward and the president would go around the room asking for any reason that the respective functional manager’s decisions should not be implemented. Prior to this session, the president reviewed what he felt was the best strategic direction for the firm (even if it meant staying on the current strategic course) and making sure that all of the managers agreed with the direction. Other teams did not have anything that resembled this “collaboration time” instead relying on each functional manager to make decision with little notice given to other managers.

Hypothesis 7

While picking an appropriate strategic direction has some effect on firm performance, the biggest impact on firm performance comes from the actual allocation of the resources in the course of everyday operations (Covin, Slevin and Schultz 1994; Kirzner 1999). These resource allocation decisions directly impact the finances of the firm. As firms deviate from the tactical

profile of successful firms following similar strategies, monies and other resources are wasted and inefficiencies result. This idea of fit is becoming an important topic in the marketing literature as some early studies have shown that the fit between operational activities and strategic type is an important driver of marketing performance outcomes (Vorhies and Morgan 2003; Walker and Reukert 1987).

H₇ - Tactical alignment is positively related to return on marketing efficiency.

Intuitively, it would seem that the relationship between strategy-to-market fit would have a direct impact on firm performance measures. However, past research has shown that the relationship between strategy and performance is more complex (Dess, Lumpkin and Covin 1997). The current study aims to explore an indirect relationship between strategy-to-market fit and performance in that strategy-to-market fit amplifies the relationship between tactical alignment and performance. One can think of this relationship as a simple two by two matrix where an effective implementation of a strategy that fits the market conditions will increase performance beyond that which can be achieved if the team effectively implements an inappropriate strategy. Empirical support for this premise comes from the work of Mckee et al (1989) and Covin et al (1994) who found that the impact of strategy on performance is contingent on the environment and that this fit moderates the relationship between managerial actions and performance.

H₈ – Strategy-to-market fit amplifies the positive relationship of tactical alignment on marketing efficiency

CHAPTER SUMMARY

The main objective of this chapter has been to provide the theoretical background for the dissertation. Conceptual definitions and hypotheses are rooted in the premises of entrepreneurial discovery derived from the Austrian school of economics. The application of this theory is justified based on the parallels between entrepreneurship and market orientation. After discussing these parallels, the chapter illustrated the contributions of linking the two streams of research. Specifically, the constructs used in the conceptual model of market opportunity recognition mechanisms include management team situational awareness, management team creative problem solving and management team strategic and tactical agreement. Market opportunity recognition mechanisms are conceptualized as the relationships between the constructs resulting in the proposed hypotheses. The methodology for testing the measures of market opportunity recognition, as well as for testing the overall model, is discussed in the following chapter.

Chapter 3 – Methodology

CHAPTER OVERVIEW

In this chapter, details of the research design used to test the proposed hypotheses presented previously are provided. Before discussing the specifics of the research design, the logic of using a simulation to study the focal research questions is reviewed, as well as the details of the specific simulation used in this dissertation. The simulation overview is followed by a detailed discussion of the operationalization and measurement of the specific constructs found in Figure 3. Afterwards, details of the multiple pre-tests used to evaluate the validity of items used to measure the various constructs are presented. The chapter concludes with an overview of the statistical techniques used to test the proposed hypotheses.

SIMULATION RESEARCH

Past research on market orientation is dominated with cross-sectional survey methodologies that limit the ability of market orientation researchers to move forward in this area of marketing research. As Sinkula, Baker and Noordeweir (1997) point out, the “interpretation” or cognitive aspects of market orientation are difficult to tap into and measure. Likewise, opportunity recognition scholars argue that retrospective survey methods hamper attempts to measure the thought processes of business people at the time of opportunity discovery (Gaglio and Katz 2001). According to Gaglio and Katz (2001), respondents must be caught in the act of thinking in order to uncover aspects of the market opportunity recognition phenomenon. In other words, researchers must investigate respondents thinking prospectively as opposed to retrospectively. Also, future research on market opportunity recognition mechanisms

should involve testing under pre-constructed scenarios that allow some control over the environment so that distractions invoking other schema do not contaminate the data but that are not so controlled that they pre-ordain a particular cognitive pattern. Unfortunately, opportunity recognition studies that have tried to accomplish this balance have erred on the side of control by utilizing experimental designs that do not account for the complex nature of business environments or do not capture the true conceptualization of opportunity recognition (cf. Shepherd and DeTienne 2005). This complexity issue is key for market opportunity recognition mechanisms research in that the mechanisms involve the cognitive processes related to a system of variables not just simple scenarios analyzed in isolation.

The argument that market orientation and market opportunity recognition mechanisms research as been limited by methodologies used in the past led to a search for potential research methodologies that might address the above concerns. After a scan of the decision making literature, it was concluded that the use of simulations represented an interesting alternative to cross-sectional methodologies. By using simulations that require participants to analyze market environments, the market opportunity recognition mechanisms phenomenon can be tapped and data collected accordingly.

More specifically, simulations have been praised for their ability to introduce real-world complexity while providing some level of control over the study not found in traditional cross-sectional survey or field experiments (Brehmer and Dorner 1993; Gonzalez, Vanyukov and Martin 2005; Gundlach and Cadotte 1994). Simulations share three key characteristics that provide this realism and control. First, simulations are dynamic, which requires the participants to think and act in real time (Brehmer and Dorner 1993). This meets the prospective thinking criteria suggested by Gaglio and Katz (2001). Second, simulations are often complex in that

they contain a high number of components and relationships between components that require participants to think through these relationships, increasing the applicability of simulations in market opportunity recognition mechanisms research (Brehmer and Dörner 1993; Gonzalez, Vanyukov and Martin 2005). Finally, simulations are opaque, which means the relationships between components and the ways to manipulate the relationships are often invisible to the subjects involved in the study. In the case of market opportunity recognition mechanisms, this is a benefit in that inferences must be made and tested in the simulated world which corresponds to market opportunity recognition mechanisms in the real-world.

Based on the characteristics discussed above, this dissertation utilizes a simulation approach to the study of market opportunity recognition mechanisms in both the measurement development study and in the test of the conceptual model. In the following section, a thorough description of the simulation, *Marketplace*, is provided.

Marketplace Overview

Based on the points outlined above, a simulation is used to test the conceptual model as well as the measurement model in this dissertation. The simulation used is *Marketplace* developed by Innovative Learning Solutions Inc. *Marketplace* involves participants starting a company and operating the company for several different decision periods. Through this process of creating and running the firm, participants must be keenly aware of the changes that take place in the market (competitor maneuverings, demand swings etc) in order to perform well. In addition, the participants, or “managers” of the firm must be able to translate these changes into meaningful events that help guide future strategies and tactics of their respective firms. In other words, opportunities must be identified and exploited.

More specifically, *Marketplace* participants are charged with starting and operating a company in the personal computer industry. The simulation is run over 8 decision periods, during which the “managers” of the company must assume responsibility for various facets of business (VP of Marketing, VP of Manufacturing, VP of Finance, etc). At the beginning of the simulation, participants must form teams, and begin the process of creating a company. In the start-up phase, the teams must make many decisions typical of a company in this industry. For example, teams are presented with a set and description of market segments found in the PC market. From this set, target markets are selected and specific geographic areas are chosen for market entry. Once the target markets are selected, teams must develop products to meet the needs of these segments based on information presented in market research, create advertisements, develop a sales forecast and set plant operating capacity accordingly.

Once these start-up decisions have been made (these take place in quarters 1-2), each firm must launch their products in their chosen markets (quarter 3). At the start of quarter 4, each team receives feedback on their performance on several dimensions (See Figure 4). A balanced scorecard is provided that is an aggregation of performance in many different functional areas including marketing, finance and manufacturing. Particularly relevant to this dissertation, the marketing performance indicators include a measure of brand rating which is the fit between the features of a firm’s products and the needs and wants of the customers in the target segment. Additionally, a measure is provided on price ratings, which is a measure of the prices charged by each company and the prices that target segment is willing to pay. A final measure of marketing performance is the ad rating, which measures the level of appeal a firm’s advertisements had to the target segment.

In addition to the scorecard, teams who purchased market research are able to see how their products, prices, and ads compared to competitors. After reviewing this information, teams are charged with adjusting all facets of the business in order to increase their overall balanced scorecard performance. This constant adjusting and maneuvering continues for four additional decision periods (quarter 5 through quarter 8). Throughout these final quarters, teams are provided the opportunity to invest in R&D that will yield additional product features, quality improvements, and higher gross margin potential.

<p><u>Q1: Organize</u> - Organize the team and assign responsibilities.</p>	<p><u>Q2: Set-up Shop</u> -Review Market Research --Set strategic direction -Set plant and sales locations -Brand Design</p>	<p><u>Q3: Test Market</u> -Develop marketing plan -Forecast demand -Set production schedule</p>	<p><u>Q4: Skillful Adjustment</u> -Review market research -Review financials -Adjust strategy and tactics</p>
<p><u>Q5: Invest in Future</u> -Prepare 1-yr business plan -R&D and marketing plan decisions -Capital expenditures</p>	<p><u>Q6: Expand and Improve</u> - Monitor the market and adjust accordingly</p>	<p><u>Q7: Expand and Improve</u> - Monitor the market and adjust accordingly</p>	<p><u>Q8: Expand and Improve</u> - Monitor the market and adjust accordingly</p>

Assessment and Survey

Figure 4 - Timeline of *Marketplace* Decisions

Customer Segments in *Marketplace*

It is important to mention the various customer segments that can be targeted by *Marketplace* companies. There are five main segments which can be tapped by management teams in route to achieving their financial performance goals. The segments are labeled “Cost-cutter”, “Workhorse”, “Traveler”, “Innovator” and “Mercedes” respectively. Each of the five segments falls somewhere along two orthogonal axes. One dimension of the segment characteristics is product performance and the other dimension is price. As shown in Figure 5, the Cost-cutter and Workhorse segments are comprised of highly price conscious consumers with relatively low performance requirements. The other three segments are comprised of tech-savvy customers who demand high performance from computer products and who are not overly concerned with price. The size of each market is indicated by the size of circles in Figure 5.

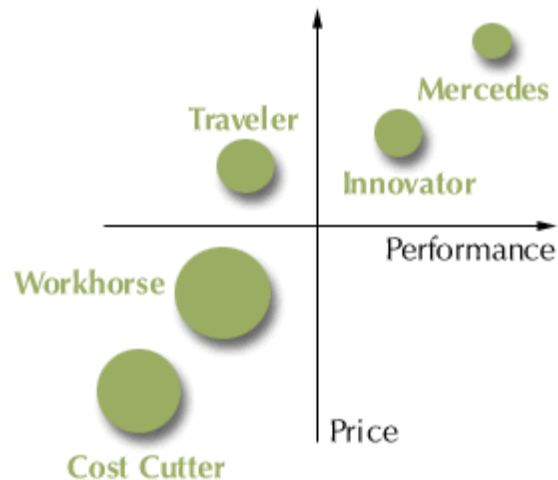


Figure 5 - *Marketplace* Customer Segments

The segments which are targeted by *Marketplace* managers represent strategic options available to each team. For example teams choosing to focus on the Traveler, Innovator and /or Mercedes markets are following a focused differentiation strategy (Miller and Friesen 1986; Porter 1980) which requires high levels of research and development investments and marketing prowess. These teams may chose to leverage these R&D investments and marketing skills by eventually launching products into the Workhorse and Cost-cutter markets, thus choosing to follow a broad differentiator strategy. Usually, these firms seek to gain a competitive advantage in these lower tier markets through best in class products. At the other end of the strategic spectrum are the firms who chose to target the larger and more price conscious segments (Cost-cutter and Workhorse) via a narrow cost-leader strategy. Here the management team's emphasis is on economies of scale and manufacturing capabilities. These teams may also chose to move beyond the main low-cost segments by launching products into upper tier markets via a broad cost-leader strategy. Typically these broad cost-leaders seek to gain market share in the high technology segments via lower prices as compared to a high technology, premium product orientation. Finally, teams can also attempt to implement a hybrid strategy (Miller and Friesen 1986; Porter 1980) which entails launching products across four or more segments. Competitive advantages come from both lower prices and superior products via the hybrid strategy. These strategic options come into play in the measurement of the strategy-to-market fit construct found in the latter portions of this chapter.

The Applicability of *Marketplace* to the Research Questions

Scholars familiar with the use of simulations have argued that the applicability of a particular simulation must be evaluated relative to the specific research questions posed. In

order to do so, Gray (2002) proposes specific criteria for judging a simulation's applicability to a given research question. The first criterion, tractability, is the researcher's ability to productively pursue the question(s) of interest. This includes the ability to manage the simulation and the participants involved. Also, tractability involves ease of use and the level of training needed to participate in the simulation. Another dimension of tractability is the ease of data collection. A simulation is said to be tractable if the researcher can collect "the right data, at the right grain size, with the right timestamp" (Gray 2002, p. 212).

The second criterion suggested by Gray (2002) is correspondence. Correspondence levels indicate the fit between the simulation and the real-world as it relates to the research question. A simulation with high levels of correspondence resembles the real-world in that many aspects of a task environment are simulated. The final criterion is engagement. According to Gray (2002) a simulated task environment is "engaging to the degree to which it involves and occupies the participants; that is the degree to which they agree to take it seriously" (p. 217).

Applying the aforementioned criteria to the *Marketplace* simulation, the conclusion is reached that this particular simulation is appropriate for the posed research questions. For example, *Marketplace* seems high in tractability for this particular study. The objective data are easily captured by the system, thus variables such as management team situational awareness, strategy-to-market fit, tactical alignment and marketing efficiency are easily tracked within the system. For the subjective data, the simulation includes a built-in survey instrument that allows researchers to send out questionnaires to participants and merge the responses with objective measures for easy analysis. As for the ease of use dimension of tractability, *Marketplace* participants are given the opportunity to play with the system before the game launches and they are given instruction on each decision period during corresponding lectures. Finally,

Marketplace is easily managed by the researcher in that team assignments, team monitoring and team performance feedback is all done automatically within the software.

On the correspondence criterion, *Marketplace* is remarkably realistic and provides a context that closely matches the actual act of starting and running a multi-million dollar operation. The developers of the game have incorporated realistic temporal demand patterns, various financing options, and a wealth of product features that can be included in the products designed by the teams. Evidence of this realism comes from participants who have played the game in executive education programs. These participants frequently have significant real-world business experience. Feedback from these types of participants often references the realism of the game or how they have been faced with similar decisions in their respective operations.

Finally, the engagement levels of the *Marketplace* simulation are quite high. Evidence of this is found in the amount of time participants spend on the game each decision period. It is not uncommon for teams to spend an average of ten to twelve hours logged into the simulation per decision period. Motivation for this level of engagement comes from the extrinsic grade that participants receive as they are all playing the simulation in collegiate academic programs of varying levels. Also an intrinsic motivation becomes apparent as the simulation is played. It is not uncommon to see “team spirit” emerge as participants become excited about “winning” the simulation, “beating the competition” or “dominating the market.” Both the expressed desire to get a good grade and to beat the competition provides support for the fact that *Marketplace* tends to create high levels of engagement in participants.

OPERATIONALIZATION OF CONSTRUCTS

As previously mentioned, measurement of market opportunity recognition mechanisms constructs is something that has received scant attention in the extant literature. Therefore, considerable effort was made in this dissertation to adequately operationalize and measure the constructs that comprise the market opportunity recognition mechanisms. In doing so, a thorough review of the opportunity recognition literature was conducted to gain insight into how the construct should be measured. In addition to the literature review, interviews have been conducted with both participants of past *Marketplace* sessions as well as with entrepreneurs and business managers with innovation or business development responsibilities. Going one step further, four executive MBA teams engaged in the *Marketplace* simulation were observed over several decision periods to provide additional insights into operationalization of specific constructs as well as market opportunity recognition mechanisms phenomenon itself. Table 1 shows a synopsis of the constructs, their conceptual definitions and the way they are operationalized in this dissertation. The definitions and descriptions of the various constructs are presented in the following sections.

Market Opportunity Recognition Mechanisms

Market Opportunity Recognition Mechanisms are the cognitive states and processes that individuals or groups use to conclude that they have identified an opportunity in the marketplace. More specifically, it is operationalized as a set of team cognition and group process variables whose interaction help teams identify opportunities in the marketplace and formulate ways to exploit these opportunities. As shown in Figure 3 the variables that make up the market opportunity recognition mechanisms are management team situational awareness (SitAware),

Table 1- Explanation of Constructs

Construct	Definition	Operationalization
Management Team Situational Awareness	The management team's ability to perceive, comprehend and predict elements in the environment.	The team average of individual managers' scores on the situational awareness assessment which assesses manager's ability to recall information about important elements in the market, the meaning of these elements and their ability to predict future market conditions.
Management Team Creative Problem Solving	The degree to which the management team uses divergent and convergent processes in strategic and tactical decision making.	The manager team's perception of the team's use of analogy, counterfactual thinking, bisociation and action -goal comparisons to make decisions.
Management Team Tactical Agreement	The degree to which the managers of a firm agree on future actions necessary to succeed in future periods.	The number of intra-team agreements divided by the number of possible agreements on multiple tactical dimensions.
Management Team Strategic Agreement	The degree to which the managers of a firm agree on the strategic direction of the firm necessary to succeed in future periods.	The number of intra-team agreements divided by the number of possible agreements on questions relating to which segments that should be pursued in future periods.
Strategy-to-Market Fit	The appropriateness of a firm's strategy given its strengths and weaknesses relative to market conditions.	Measured with as a binary item indicating whether the team followed an appropriate strategy given its strengths relative to the market in Q6.
Tactical Alignment	The degree of alignment between the focal firm and an ideal firm that produces superior performance by arranging firm resources to implement a particular strategy.	The number of points a firm acquires when resource allocations are compared to resource allocations of the ideal profile for a given strategy.
Marketing Efficiency	The ratio of marketing resource inputs consumed to outcomes achieved.	The sum of revenues in Q6-Q8 divided by all marketing related expenditures in Q6-Q8.

management team tactical agreement (TTA), management team strategic agreement (TSA) and management team creative problem solving (CPS). In the following sections, the operationalization and specific measures for each of these components are discussed.

Management Team Situational Awareness

Management team situational awareness is defined as the management team's ability to perceive key elements of the market, to comprehend their meaning and to predict of their impact on the market going forward. It is operationalized as the team's ability to recall major demand indicators, team performance relative to competitors, as well as the team's ability to predict future events in the market. In order to measure this variable, a software modification was made that assesses each team members' knowledge of the market. The questions in the assessment are meant to gauge each team member's ability to recall important data about the market as well as their ability to predict future changes in the market environment. The aim of the recall question is to capture the noticing and comprehending aspects of awareness and the prediction aspect captures the ability to foresee where the market is heading. The list of questions asked is provided in sections 1-7 of Appendix C-14.

Each team member was scored on the accuracy of their answers on the recall and prediction portion of the SitAware assessment. For recall questions, the software automatically scores the team member's answers against the facts about the marketplace. In addition, a score will be generated on the team member's answer to questions about future events in the market. The scoring of this portion of the assessment will be delayed to allow for the market to unfold so that answers can be compared to actual data. For example, team members will be asked to predict the number of competitors entering their respective segments in the coming quarters.

This answer will be compared to the actual number of competitors that enter the team's respective segments in the closing quarter and a variance score will be calculated. Again, each team member's score on the SitAware assessment will be aggregated to a team level score.

Management Team Creative Problem Solving

Management Team Creative Problem Solving (CPS) is defined as the degree to which the management team uses divergent and convergent processes in strategic and tactical decision making. The CPS construct is two dimensional in that the cognitive processes involved are divergent and convergent thinking (Palmon and Mumford 2003). Divergent thinking is the cognitive process used by managers to clearly define the problems presented to the management team and to explore response possibilities. Divergent thinking is operationalized as the perception of the team's ability to develop multiple options for responding to the changes in the marketplace using combinative and analogous thinking as well as the team's perception of its success in break existing mental models via mental simulations. The main focus here is the team's ability to unlearn previously held assumptions about how to compete in the marketplace. As this is a function of the group's interpersonal interactions, this is not captured in the *Marketplace* software, requiring a survey instrument that measures the degree to which team meetings are oriented toward these divergent thinking processes.

Extant literature, interview data and observations were consulted to develop a bank of questions regarding both the processes the team used in developing possible steps to take in piloting the firm in its respective market environment. These sources were also consulted in building a question bank measuring each team member's perception of the team's ability to break through firmly held assumptions about the tactics needed to succeed in the market. More

specifically, the questions tap the degree to which the team sought out connections between marketing tactics and demand fluctuations, the degree to which team's used combinative thought processes to develop new products and advertisements and the degree to which the team used mental simulation to think through competitive maneuverings. A full list of the questions tapping the divergent thinking dimension can be found in Appendix B-1.

Convergent thinking is defined as the cognitive process of assessing the workability of ideas, the resources needed to implement the ideas and the value of the ideas. Herein convergent thinking is operationalized as the perception of the team's ability to elaborate on how to make potential responses a reality and the financial value of those responses as well as the team's awareness of its resource constraints. This particular construct is measured via traditional survey questions that pertain to the degree to which the team discussed the probability that certain tactics would work, the financial impact of those tactics and the risk of not acting on particular tactics (See Appendix B-2).

The management team creative problem solving construct was ultimately treated as composite index of items tapping the different aspects of both divergent and convergent thinking. Divergent thinking was measured with a set of items tapping the analogous thinking, combinative thinking and mental simulation aspects of the dimension. Convergent thinking was measured with a set of items representing the elaboration, evaluation and realism of the dimension. "More" CPS is represented by higher frequencies across the multiple items used to measure each dimension. Each team member was asked to rate the degree to which their team used the various aspects of creative problem solving in decision making. A five point, frequency-type scale was employed which ranged from (1) "we spent very little time on this

compared to other activities” to (5) “we spent a great deal of time on this compared to other activities”.

Management Team Tactical Agreement

Management team tactical agreement (TTA) is the degree to which the members of the team agree on future tactics needed to succeed in the marketplace. This agreement was assessed using the number of intra-team matches on items relating to various strategic thrusts available to the team in the remaining quarters. A list of these items and possible responses is found in Section VIII of Appendix C-14. Due to a disproportionate number of team members across all teams, the number of matches was divided by the number of all potential matches on each item. The equation for tactical agreement is found below:

$$TTA = \sum X_j \div N_j$$

Where

X_j = Number of matches on the j th tactical item.

N_j = Number of possible matches on the j th tactical item.

To calculate N , the basic formula for determining matched pairs was followed such that:

$$n \times (n - 1) \div 2$$

Where

n = number of team members.

Management Team Strategic Agreement

Management team strategic agreement (TSA) is similar to tactical agreement in that it is the degree of agreement between members of the management team on items asking which

customer segments should be targeted going forward. A list of these questions is also found in Section VIII of Appendix C-14. Again, the *Marketplace*, simulation allows teams to target customer segments with different needs and wants. As mentioned above the Traveler, Innovator, and Mercedes segments represent the high end of the market in that customers in these segments want high quality, high-tech products and are willing to pay premium prices. On the other hand, Cost-cutter and Workhorse segments represent customers who want simpler products at reduced prices. Each of these two groups of segments represents a different a different strategic position. Strong emphasis on the premium segments indicates a differentiation strategy while a focus on the lower-end segments represents a cost-leadership strategy.

The specific measurement of management team strategic agreement is the extent that the teams agree on the segments that should be pursued going forward.

$$TSA = \sum X_j \div N_j$$

Where

X_j = Number of matches on the j th strategic item.

N_j = Number of possible matches on the j th strategic item.

Again, to calculate N , the basic formula for determining matched pairs was followed such that:

$$n \times (n - 1) \div 2$$

Where

n = number of team members.

Tactical Alignment

Tactical alignment is the degree to which a team's tactical actions match the actions of an ideal team following the same strategy. To develop the measure of this construct, a number of

steps were performed. First, the ideal profile had to be developed using data from past *Marketplace* competitions. Once these profiles were established, the actions of teams in the current sample were compared against the ideal team profile following the same strategy.

The data to calculate the ideal profile for each strategy type was obtained by studying past (games from six month and one year ago) *Marketplace* competitions. The outcomes of 23 different *Marketplace* competitions with 115 teams were reviewed in order to determine top performing teams following a given strategy. High performing teams were determined by their return on marketing expenditures. Once performance outcomes were determined, each team was categorized by strategic type. This categorization was conducted using targeted segments as the main criterion as illustrated in the strategic types section above. The total number of teams in each strategic category can be found in Appendix B-3.

Past studies using profile agreement have typically used the highest 10-15% of businesses to develop ideal profiles (Van de Ven and Drazin 1985, Venkatraman and Prescott 1990, Vorhies and Morgan 2003). Following Vorhies and Morgan (2003), plots of the Return on Marketing Expenditures (ROME) calculation for teams in each strategic category were used to confirm that the top 10% of teams was suitable cut-off. Return on marketing expenditures appeared to dip significantly after the top four teams in each category. To further validate the top performers from each strategic category, the return on marketing expenditures figure for each team was compared to the mean of the category which revealed that each of the top performers was at least one standard deviation above the category mean.

Once top performers were identified, the next step was to develop the profile for each strategic type by calculating top performer averages across a range of key tactical dimensions. These averages were also calculated for each of the remaining quarters (Q6-Q8). For example

the marketing dimensions include (1) the number of brands for sale (2) the number of new product introductions and (3) the number of R&D features incorporated into brands for quarters six, seven and eight. The manufacturing dimensions include (1) plant capacity, (2) the dollar amount spent on improving product quality and (3) the dollar amount spent on improving change-over time on the manufacturing floor. The sales management dimensions include (1) the number of cities where a sales office was located and (2) the total size of the sales force. Finally, the finance dimensions include (1) the short term debt to loan capacity ratio and (2) the long term debt to loan capacity ratio. See Appendix B-4 for a complete list of the variables used in the profiles well as the averages for top teams on each of the variables.

The last step in calculating the tactical alignment measure was to score teams from the current sample against the top performers' dimension averages. A simple scoring convention was used such that if a current team's dimension average was greater than or equal to the top performers' average, then 10 points was awarded. Past research has used the difference in means to calculate a profile deviation (Vorhies and Morgan 2003); however in the current study, the dimensions each contain differing units of measure. Thus, the scoring system was used in lieu of deviation from the mean. Based on the number of dimensions (10) and remaining quarters (3), each team received a score ranging from 0 to 300 points as a measure of tactical alignment.

Strategy-to-Market Fit

Strategy-to-Market fit is the appropriateness of the team's overall strategy given its strengths relative to the market in Q6. This is a binary measure which equates to a 1 for teams who followed the ideal strategy given their Q6 position in the market and a 0 if a team chose a

different strategy. The difficulty in determining the measure is in the researcher's ability to determine an ideal strategy.

The ideal strategy calculation was made using a decision-tree heuristic based on a firm's available financial resources, manufacturing capabilities, technological advancements in products, intensity of distribution, and general marketing capabilities based on quarter 5 decisions and outcomes. From these various dimensions three scores were generated, (1) an available resources score, (3) a marketing aptitude score and (4) a manufacturing aptitude score. The specific details of these calculations are available in the Appendix B-5. From these three scores, a heuristic was applied to determine the ideal strategy for each firm. The heuristic was based on work on strategic typologies developed by researchers who have focused on testing and refining Porter's five strategic types (Miller and Friesen 1986; Wright 1987).

The table showing the decision tree heuristic is found in Appendix B-6. Essentially, firms with average levels of available resources and strong marketing aptitude are best suited for a broad differentiator strategy. Firms with average levels of available resources and strong manufacturing capabilities are better suited for a broad cost-leader strategy. Firms with above average resources, strong marketing aptitude and strong manufacturing aptitude should pursue a hybrid strategy. Firms with below average resources and strong marketing aptitude should pursue a narrow differentiation strategy. Finally, firms with below average resources and strong manufacturing aptitude should follow a narrow cost-leader strategy. Narrow cost leadership was also selected as the ideal strategy for firms with below average resources and no marketing or manufacturing strengths, due to the ease of serving customers in the low-end segments and the greater size of these segments.

Once the ideal strategy was determined for each company, a comparison was made between the ideal strategy and the strategy actually pursued by the firm. As mentioned, if the firm's actual strategy matched the ideal strategy, a 1 was assigned otherwise 0. The heuristic was validated by conducting an ANOVA on the pre-test data. In the ANOVA, teams identified as having followed the ideal strategy were separated from teams who deviated from the ideal strategy. Once categorized, the ANOVA tested for differences in performance between the two groups. The ANOVA results can be found in Appendix B-7 and show that significant difference in performance existed between the two pre-test groups ($F= 7.457, p = .007$).

Marketing Efficiency

Marketing efficiency is defined as the team's ability to respond to customer needs and wants in a manner that uses resources efficiently. It is operationalized as the team's return on marketing expenditures (ROME). First, total revenue generated by the firm in the quarters 6 -8 was calculated. Then the sum of Q6-Q8 revenues was divided by the sum of Q6, Q7 and Q8 marketing expenditures (product research and development costs, sales force expenses, advertising expenses, sales office lease costs, marketing research costs, and web marketing expenses) (Vorhies and Morgan 2003).

MEASUREMENT ITEM DEVELOPMENT

The constructs that make up the market opportunity recognition mechanisms represents a major focus of this dissertation. Thus, considerable effort was given to developing and testing a measurement model that helped to determine the content and structure of the market opportunity recognition mechanisms constructs. The following section provides the details of this process.

These steps were based on established research in test item formulation and testing (Haladyna 1999) as well as scale development and testing (Churchhill 1979; De Vellis 1991; Rossiter 2002). Due to major differences between the items used to measure the various components of market opportunity recognition mechanisms, the methods used to develop the measurement items for situational awareness and the creative problem solving processes are discussed separately. A general description of the pre-tests used to formulate and test the items used to measure the market opportunity recognition mechanisms constructs is presented prior to the details of testing of individual constructs.

Item Formation

The extant literature on situational awareness, creative problem solving and entrepreneurial alertness was consulted in developing a pool of items for situational awareness and creative problem solving processes. Also, this initial item list for the constructs of interest was generated based on interviews with students who were engaged in the simulation as well as with managers actively working in the business world. In total, interviews were conducted with 10 students and 5 managers for a total of 15 interviewees.

Survey Pretests

Multiple pre-tests were conducted in order to purify the newly developed measures of situational awareness and creative problem solving processes. In Pre-test A, following the recommendations of Rossiter (2002), the survey was administered via paper copy to 2 students engaged in the *Marketplace* simulation as well as to 2 managers and 1 content expert. In these sessions, the participants were asked to complete the survey without interruption and then an open discussion about item clarity, completeness and redundancy took place generating feedback

about the individual items themselves. The feedback obtained from these review sessions was used to refine the pool of items accordingly.

Following this first pre-test of the measurement items, Pre-test B was conducted to purify the measures of both situational awareness and creative problem solving processes. In Pre-test B, approximately 50 undergraduates from a large southeastern public university were asked to complete a paper and pencil version of a questionnaire that contained items for both management team situational awareness and creative problem solving processes. The students participated in groups of five and following each session, students were asked to provide feedback on the items in a focus group format. Responses to the situational awareness items were also graded for accuracy to develop some early statistics of level of difficulty and validation of item responses. At the conclusion of Pre-test A and Pre-test B, the pool of items for management team situational awareness was 50 items and 45 items for creative problem solving processes.

Pre-test C was a paper and pencil version of the 45 items pertaining only to creative problem solving processes. The survey was administered to 175 undergraduate students at a large southeastern public university who were enrolled in a course which utilized the *Marketplace* simulation as the primary means of instruction.

Finally, Pre-test D was conducted to test both SitAware and CPS items that had been refined in previous pre-tests. This test was conducted on 50 items for SitAware and 21 items tapping the CPS construct. Like the previous pre-tests, Pre-test D was conducted at a large southeastern public university with both undergraduate and MBA students participating in the *Marketplace* simulation. It should be noted that the MBA sections and undergraduate sections were separate sections. The sample was distributed across one undergraduate section and two different MBA sections. The total sample size for this pre-test was 430 participants. Unlike

previous pre-tests, Pre-test D was administered via the *Marketplace* software. Participants were asked to complete the SitAware assessment and CPS survey during a special session in each section where all participants completed the questionnaire at one time. Again this yielded a sample size of 430 participants which represented 98% of all students in the MBA and undergraduates classes. Of the 430 responses, 7 had to be dropped due to missing data issues yielding 423 usable responses.

Scale purification: Management Team Situational Awareness

Because items on the management team situational awareness assessment are measured against an objective “truth”, traditional latent construct purification methods were inappropriate for validating and testing items. Therefore, techniques developed from item response theory (Halydyna 1999) were used to validate the SitAware items. These techniques are typically used in developing and validating items used in academic or certification exams. Item discrimination was tested using the point-biserial correlation between item and assessment performance which is useful when correlating a dichotomous variable with a continuous variable. To obtain point-biserial correlations, each item was correlated with total performance minus the score of the item itself. One issue with point-biserial correlations is that the maximum value can sometimes exceed unity and there is no established test of significance (Garson 2007). Therefore, items were evaluated simply on the point-biserial values. Items were evaluated against the rule of thumb that values greater than .15 are acceptable and values greater than .25 are considered good (Varma 2006).

In addition to the point-biserial correlations, items were validated using an index of discrimination. This index is simply the difference between the proportion of an upper group

which got an item correct and the proportion of a lower group who got the item correct. Following Varma (2006), participants were divided into the upper 25%, the middle 50% and the lower 25% categories based on performance on the SitAware assessment. The index of discrimination for each item was based on the difference between the upper 25% group and the middle 50% group and then the difference between the upper 25% group and the lower 25% group. Then each item was evaluated to ensure that the value of the differences was positive (a negative difference indicates that a lesser performing group answered the question correctly more often than the high performing group). The magnitude of the difference was also evaluated by comparing the overall difference average across all items to the average difference between groups for each individual item. Items with differences lower than the overall average were flagged for further evaluation.

At the outset of pre-testing, the situational awareness item pool was 73 items which were paired down to 50 items by the time pre-test D was administered. Following pre-test D, items were reviewed as outlined above and either omitted or re-written in hopes of improving item performance due to the importance of the item in tapping the domain of SitAware. The final set of questions used in the assessment can be found in Appendix C-14, Sections I – VII.

Scale Purification: Creative Problem Solving

Scale purification for creative problem solving was assessed for dimensionality, reliability, internal consistency, convergent validity, and discriminate validity. Each construct was tested for *dimensionality* to confirm the existence of the hypothesized number of dimensions underlying a set of measures (Hattie 1985). Confirmatory factor analysis (via principle components analysis in SPSS 13.0) was used to test dimensionality because it has been shown to

provide a more rigorous interpretation than other available methods including exploratory factor analysis, item total correlations, and coefficient alpha (Clark and Watson 1995; Hattie 1985; Jolliffe 1986). Internal consistency reliability was assessed using Cronbach's coefficient alpha (Churchill 1979; Cronbach and Meehl 1955). Alpha values above a .6 cutoff are sought for all variables as that level suggests good correlation between the item and true scores, while lower alpha values indicate the item set does a poor job of capturing the construct of interest (Churchill 1979; Nunnally 1978).

Using these procedures to assess pre-test data, the initial pool of pretest items was reduced from 45 items to 21 items for Pre-test D. Following Pre-test D, the evaluation of item performance resulted in the CPS scale being reduced down to 12 items which are found in Section IX of Appendix C-14. For the final survey, 20 items were used in the measurement of CPS but the additional 8 items were exploratory and not used in the final analysis.

SAMPLE AND DATA COLLECTION

This section outlines the sampling plan for the final questionnaire as well as the method that was used for collecting the data. Unlike the measurement development portion of this study, the unit of analysis for the test of casual relationships is the management team. The sample for this study was comprised of undergraduates and MBA students engaged in the *Marketplace* simulation at multiple universities across the US. A minimum of three managers must respond from each team in order for a given team to be included in the sample.

The survey and assessment mentioned previously was administered to the entire management team of each simulated firm. These participants were asked to complete the assessment and questionnaire via an electronic e-mail that was sent automatically from the

Marketplace software. Within this e-mail was a link to the questionnaire housed within *Marketplace*. All of the participating schools administered the questionnaire during a special session dedicated solely to the questionnaire. The software was also used to send reminders over pre-defined intervals to those participants who were not present for the questionnaire session. All responses from these outstanding questionnaires were collected electronically as well.

The timing of the administration of the data collection tool was also important. In the simulation, participants complete several decision periods representing quarters. During these virtual quarters, participants slowly became familiar with the nuances of the market, how to input decisions into the software and how to make decisions with their fellow managers. Therefore, administration of the survey and assessment took place between quarter 5 and quarter 6 decisions. This allowed participants time to reach a “steady-state” in terms of coping with the technicalities of the software, the context of the simulation and the dynamics of fellow managers.

QUESTION AND SCALE VALIDATION WITH THE FINAL SAMPLE

Before performing statistical hypotheses testing, questions and scale validation procedures were conducted. Like those used in Pre-test D, point biserial correlations and indices of discrimination were performed on the SitAware assessment items. CFA and reliability analysis was used to evaluate the validity the final CPS measures. The results are provided in the next chapter.

STATISTICAL TECHNIQUES FOR HYPOTHESES TESTING

General Linear Modeling and Logistic Regression were used to test the hypotheses.

These statistical techniques were appropriate given (1) the econometric nature of the data (items are assumed to be free of error) (2) the sample size obtained, (3) the multiple interactions in the model and (4) the combination of binary and continuous variables. Actual results of hypotheses testing are found in the following chapter.

Hypothesis 1

Hypothesis 1 proposes that SitAware is positively related to strategy-to-market fit. Logistic regression was used to test this hypothesis due to the binary measurement of the dependent variable, strategy-to-market fit. While logistic regression has many similarities to GLM procedures, it is not assessing the linearity between the two variables. Instead it is used to calculate the odds that an observation will fall into a particular category based on the characteristics of the independent variables. The predictive success of the logistic regression of SitAware on strategy-to-market fit was assessed by looking at the classification table, showing correct and incorrect classifications of the dichotomous strategy-to-market fit variable. In addition, the Wald statistic was used to gauge the significance of the SitAware variable.

Hypothesis 2

Hypothesis 2 posits that management team situational awareness (SitAware) is positively related to tactical alignment. To test this hypothesis, ordinary least squares regression was used to assess the relationship between total points scored on the SitAware assessment and the points associated with tactical alignment (TA) which measures the degree of fit between the focal

firm's tactical actions and those of the ideal firm for a given strategy type. This relationship was tested by estimating the β and p value between SitAware and TA.

Hypothesis 3

Hypothesis 3 is similar to Hypothesis 1 in that an interaction effect is being tested in a logistic regression equation. In this case, it is hypothesized that CPS will amplify the positive effect of SitAware on strategy-to-market fit. In other words, the higher the level of CPS and SitAware, the more likely a management team was to choose the ideal strategy given its strengths and weaknesses relative to the market. Following Aiken and West (1991), a logistic regression equation was developed that included the product term of SitAware by CPS in addition to the main effects of SitAware and CPS separately. The logistic regression classification table and Wald statistics were used to evaluate the hypothesis.

Hypothesis 4

Hypothesis 4 is also a test of an interaction effect in that it is hypothesized that creative problem solving will also amplify the positive relationship between SitAware and TA. To test the interaction effect of CPS and SitAware on tactical alignment, separate regression lines were computed for one standard deviation above the mean of the CPS variable and one standard deviation below the mean of CPS. From these new regression equations, simple slope tests were performed on each line to determine the level of significance of the interaction effect. The test of this hypothesis was performed using the procedures outlined by Aiken and West (1991).

Hypothesis 5

It is posited that management team strategic agreement (TSA) will amplify the positive relationship between SitAware and strategy-to-market fit (SMF) in hypothesis 5. Again, logistic regression was used to test this hypothesis by including the product terms of TSA and SitAware in the logistic regression equation predicting SMF. Diagnostics mentioned in Hypothesis 3 were used as evidence of support, or lack thereof, for this interaction effect.

Hypothesis 6

Hypothesis 6 posits that team tactical agreement amplifies the positive relationship between management team situational awareness and tactical alignment. A test of the interaction between the two variables was performed following Aiken and West (1991). To test the interaction effect of TA on SitAware, separate regression lines were computed for one standard deviation above the mean of the TA variable and one standard deviation below the mean of TA. From these new regression equations, simple slope tests were performed on each line to determine the level of significance of the interaction effect.

Hypothesis 7

Hypothesis 7 posits that tactical alignment is positively related to marketing efficiency. To test this hypothesis, OLS regression was used and the β and p values consulted as evidence of support for the hypothesis. It should also be mentioned that a Sobel test for mediation was also conducted to assess the path of SitAware through TA to marketing efficiency.

Hypothesis 8

Finally, Hypothesis 8 argues that the positive relationship between tactical alignment and marketing efficiency is amplified by strategy-to-fit. This moderating effect was tested using Aiken and West (1991) and Cohen and Cohen (1988). However, in this case the tests of the simple slopes were based on the binary conditions of the strategy-to-market fit as opposed to slopes based on one standard deviation above and one standard deviation below the mean of SMF. In other words, a regression line is formulated and assessed when $SMF = 0$ and a regression line is formulated and assessed when $SMF = 1$. The hypothesis is supported if the slope of the tactical alignment / marketing efficiency regression line where $SMF = 1$ is greater than the slope of the line when $SMF = 0$.

CHAPTER SUMMARY

The research methodology used to test the proposed hypotheses developed in Chapter 2 was described in this chapter. The previous sections provided details of the research design, operationalization of constructs, instrument development, the various pre-tests conducted, data collection methods and the statistical tools used to evaluate the hypotheses. Chapter 4 presents the results of the statistical hypothesis testing.

Chapter 4 –Data Analysis

CHAPTER OVERVIEW

The purpose of Chapter 4 is to present the findings from the main study of market opportunity recognition mechanisms and their impact on resource allocation decisions. The results from the aforementioned pre-tests were used to select the final set of questions measuring management team situational awareness, management team creative problem solving and strategic and tactical agreement. Measures of strategy-to-market fit and tactical alignment were validated against the pre-test data as mentioned in Chapter 3.

The chapter is organized as follows. The details of sample size and composition are presented in the sections immediately following this introduction. Before presenting results of the hypothesis testing, measure evaluation is provided which supports the findings of the pre-tests in terms of the validity of the items used to measure the dissertation constructs. The measure evaluation is divided into two separate sections with the management team creative problem solving measurement details presented first followed by the analysis of the management team situational awareness measures. Hypothesis testing follows the analysis of measures and the chapter concludes with a summary of the findings of the study.

SAMPLE DETAILS

The survey and assessment instrument highlighted in the “Final Questionnaire” section of Chapter 3 was administered to several collegiate classes which employed the *Marketplace* simulation as the primary means of instruction. Students participated in these simulation classes

at several different colleges and university across the United States. The 5 participating institutions ranged from a large public university located in the Southeastern region of the US to a small private college located in the Midwestern region United States.

The sample was comprised of both undergraduates and MBA students. In aggregate, a total of 581 students representing 128 *Marketplace* teams responded to the questionnaire. The make up these teams was 444 undergraduates representing 96 teams and 137 MBA students representing 32 teams. After an initial screening of the data, 11 teams were discarded from the sample. These teams were discarded based on problems with missing data and/or failure to follow protocol of the study by members of the team. For example, one objective of the study was to assess the situational awareness found in the memory structures of the participants. Thus, participants were asked not to consult information found in the *Marketplace* software while responding to the situational awareness assessment. Multiple participants in 8 of the 11 teams discarded from the study consulted the software during the situational awareness assessment. The other three teams were discarded due to one or more members of the team discontinuing the questionnaire prematurely which resulted in less than three respondents per team. It should also be mentioned that teams were only retained if three or more teammates participated in the study. Teams with less than three members responding to the questionnaire were not included in the study and were not accounted for in the 128 teams reported above. Finally, out of the 581 students responding to the questionnaire, 19 failed to complete the questionnaire and 10 students completed the survey in an amount of time that is indicative of simply filling in answers without thinking through responses. However, deleting these students from the team did not result in the team's total respondents totaling less than three. Therefore, the students' data were removed from the data base while retaining the respective team as an observation point. The final count

on participants and teams used in the final study was 552 participants representing 117 teams which is an average of 4.7 members per team.

The final mix of the sample was 95 undergraduate teams and 22 MBA teams. To justify this heterogeneous sample, an ANOVA was performed comparing undergraduate responses to MBA responses. Due to the large differences in sample size between the two groups, 22 undergraduate teams were randomly selected for the ANOVA procedure. The results of the ANOVA showed no difference in responses on the SitAware score ($F = .278$; $p = .599$), CPS ($F = .028$; $p = .899$) and level of strategic agreement ($F = .085$; $p = .771$) and tactical agreement ($F = .897$; $p = .367$). An ANOVA was also performed on the dependent variable, return on marketing expenditures (ROME). Again, the results showed no differences in ROME between undergraduate teams and MBA teams ($F = .006$; $p = .938$).

EVALUATION OF MANAGEMENT TEAM CPS MEASURES

Measures of management team creative problem solving (CPS) were assessed for validity and reliability to ensure that the findings from the various pre-tests carried forward into the main study. The first analysis of the final CPS measures was performed to assess the measures for any abnormalities in the distribution of the data. The descriptive statistics found in Appendix C-1 show that the data appear to be normally distributed with no issues with skewness or kurtosis. Item CV1 was borderline at $-.935$ but was retained based on the essence of the question and that it was under the threshold of 1.00 for skewness measures. The means and variances for each item also indicate decent variability in the responses evidenced in the standard deviations above 1.00 for six of the nine measures.

CPS is posited to be comprised of two dimensions, divergent thinking and convergent thinking. 12 total items were used to measure these two aspects of management team creative problem solving. The dimensionality of CPS was evaluated using principle components analysis. A varimax rotation solution was used to conclude that CPS items loaded on the appropriate factor. The factor and reliability analysis found in Appendix C-2 shows the item loadings and that each item's respective loading was above the .600 rule of thumb indicating sufficient convergent validity of the measures. Reliability analysis was also performed using the Cronbach's alpha statistic to assess internal consistency of the measures. The Cronbach's alpha statistic for the 12 items that comprise CPS was .702 indicative of sufficient internal consistency.

EVALUATION OF MANAGEMENT TEAM SITUATIONAL AWARENESS MEASURES

As mentioned in Chapter 3, management team situational awareness (SitAware) was measured using items similar to traditional academic examination formats. Each item was dichotomously scored as either right or wrong. Thus, methods used to assess survey item validity were inappropriate for evaluating the SitAware measures.

Two techniques for evaluating test items were used to evaluate the SitAware items. First, point-biserial correlations were calculated for each item. A .150 cut-off was used to assess the adequacy of the items and .250 was used to consider an item "good" in the assessment of situational awareness. The results of the point bi-serial correlation analysis are found in the Appendix C-3. The second test of SitAware validity is the p-index assessment. Participants were grouped into echelons based on quartiles and then p-indices produced for each group. To

evaluate the validity of the items, the p-indices were compared to ensure that the direction of the scores was correct. This analysis is found in Appendix C-4.

Following the pre-test, 13 items were flagged as potential problems but instead of discarding the items, they were re-written in hopes of improving the point-biserial correlations and p-indices. Out of the 13 items flagged, 5 actually improved from the revisions and were deemed acceptable for inclusion in the final study data. 8 items were still problematic following the revisions and were not retained in the final data set. These items are noted in Appendix C-3. Based on these omissions, a total of 62 questions were used to build the aggregate score for SitAware. Given that a total 10 points was assigned to each questions, it was possible for scores on the SitAware to range from 0 to 620. The actual descriptive statistics show that the mean for SitAware was 354.5 with a min of 144 and a max of 542. The standard deviation for the measure was 62.3.

HYPOTHESES TESTING

The following section provides the details of the various statistical techniques used to test the proposed hypotheses found in Chapter 2. The hypothesis testing process was broken down into three stages. The first stage represents the logistic regression analysis used to test the relationships between the variables comprising market opportunity recognition mechanisms and strategy-to-market fit (Figure 6). The second stage represents the ordinary least squares regression procedure used to test the relationship between market opportunity recognition mechanisms variables and tactical alignment as well as the relationship between tactical alignment and return on marketing expenditures (Figure 7). The third and final stage represents

the test of the effect of the interaction between tactical alignment and strategy-to-market fit and return on marketing expenditures (Figure 8).

Stage 1

The relationships tested in the first stage of hypotheses testing are depicted in Figure 4.1 and include the market opportunity recognition variables and the strategy-to-market fit dependent variable.

Hypothesis 1 was tested using a simple logistic regression equation which predicts the probability of strategy-to-market fit based on high levels of management team situational awareness. Goodness of fit for this logistic equation was evaluated using the Hosmer and Lemeshow chi-square test. In this test, a good fitting model is one where the Hosmer and Lemeshow chi-square test indicates a p-value greater than .05 (Garson 2007). For the main

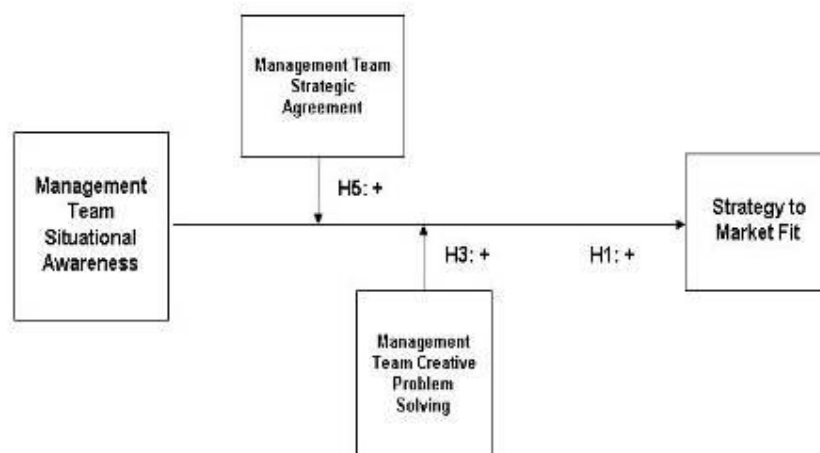


Figure 6- Logistic Regression Analysis

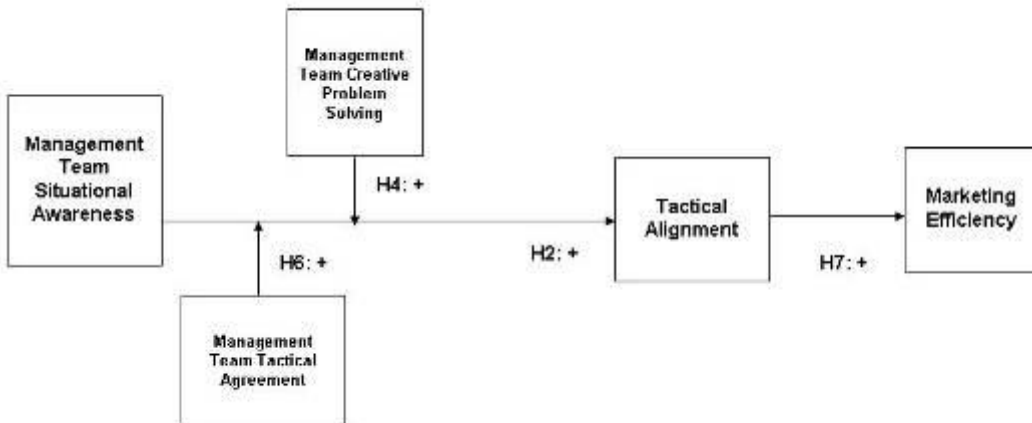


Figure 7 - Ordinary Least Squares Regression Analysis

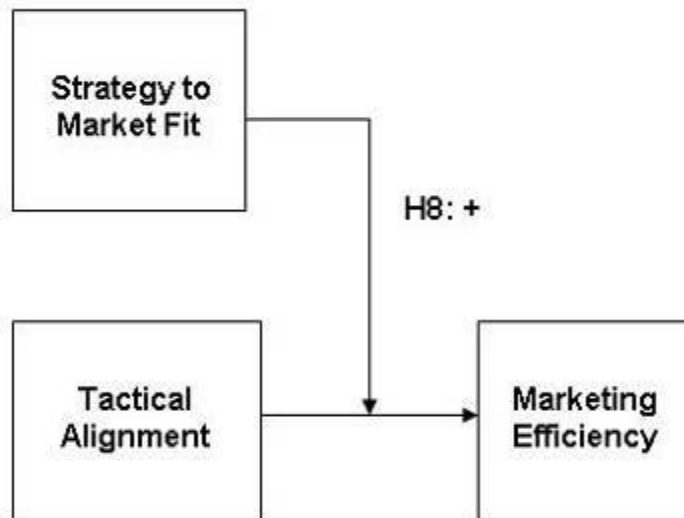


Figure 8 - Test of H8 Interaction

effects of SitAware on strategy-to-market fit, the model fits the data well ($\chi^2 = 7.80$, $p = .454$). In this equation, the Wald statistic (Wald = 4.73, $p = .029$) indicates that the SitAware is in fact a significant predictor of strategy-to-market fit thus supporting H1.

Hypothesis 3 was tested by developing a logistic regression equation that includes the main effects of SitAware, management team creative problem solving (CPS) and the interaction term of SitAware by CPS (Aiken and West 1991). The Hosmer and Lemeshow goodness of fit test was used to evaluate the overall fit of the logistic regression equation. The results of the model fit test was that the model fit the data reasonably well ($\chi^2 = 11.903$, $p = .156$). However, the Wald test indicates that the interaction between SitAware and CPS is not significant (Wald = 1.737, $p = .188$)

Finally, the test of hypothesis 5 involved a logistic regression equation that included the main effects of SitAware, the main effects of management team strategic agreement (TSA) and the interaction term of SitAware by TSA (Aiken and West 1995). Using the Hosmer and Lemeshow test as the recommended test of model fit, the model fits the data well ($\chi^2 = 6.62$, $p = .578$). The Wald statistic reveals that the interaction term is significant at the .10 level (Wald = 2.282, $p = .066$) providing partial support for H5.

Stage 2

The second stage of hypothesis testing involves a test of the main effects of management team situational awareness on tactical alignment as well as the hypothesized interactions between SitAware and management team creative problem solving and management team tactical agreement respectively. This second stage is depicted in Figure 4.2 below.

Hypothesis 2 was tested by building an ordinary least squares (OLS) regression equation with SitAware regressed on tactical alignment. The Beta-weight and significance levels ($\beta = .396, p < .001$) show strong support for H2. Additional support for this hypothesis is also provided by the R^2 statistic which is .157 meaning that almost 16% of the variance of tactical alignment is explained by management team situational awareness.

Hypothesis 4 posits that CPS amplifies the positive relationship between SitAware and tactical alignment. To test the hypothesis, an OLS regression equation was constructed which included the main effects of SitAware and CPS as well as the interaction term of SitAware by CPS (Aiken and West 1991). Results of the test show that interaction of management team situational awareness and management team creative problem solving does not amplify the main effect of SitAware on tactical alignment ($\beta = .030, p > .05$). Thus H4 is not supported.

Hypothesis 6 was tested in a manner similar to H4. An OLS regression equation was constructed which included the main effect of SitAware, the main effect of Management team tactical agreement and the interaction term of SitAware by TTA. The results of this regression model support the hypothesis ($\beta = .212, p = .021$). Further support for the hypothesis is found in the R^2 statistic which increased to .264 which equates to an additional 10.7% of explanatory power over the main effect of SitAware on tactical alignment.

Hypothesis 7 states that tactical alignment is positively related to marketing efficiency. Support for this hypothesis is found in the results of an OLS regression equation where tactical alignment is regressed on return on marketing expenditures (the operationalization of marketing efficiency). Results of the test reveal a significant Beta ($\beta = .451, p < .001$). To further validate the model, a Sobel test of mediation was performed to assess the mediation of the SitAware / marketing efficiency relationship by tactical alignment. The Sobel test was performed using the

unstandardized regression coefficient and standard error term for the association between SitAware and tactical alignment as well as the unstandardized regression coefficient and standard error term for the association between tactical alignment and marketing efficiency (Baron and Kenney 1986; MacKinnon, Warsi, and Dwyer 1995; Sobel 1982). The test itself was performed using SPSS via the procedure prescribed by Preacher and Hayes (2004). Results of the test support the mediation of SitAware and marketing efficiency by tactical alignment ($t = 3.315, p < .001$).

Stage 3

The purpose of the third and final stage of hypothesis testing is to evaluate H8 which posits that strategy-to-market fit will amplify the relationship between tactical alignment and marketing efficiency (See Figure 4.3 below). Following Aiken and West (1991), the tactical alignment by strategy-to-market fit interaction term was included in a regression model which also included the main effects of tactical alignment. The results of the test show that H8 is not supported in that the beta is not significant ($\beta = .267, p = .113$).

CHAPTER SUMMARY

The purpose of Chapter 4 was to describe the data analysis procedures used to evaluate the final measure of the proposed constructs and to test the hypotheses presented in Chapter 2. Descriptive statistics, principle component analysis and reliability analysis were used to evaluate the measures of management team creative problem solving. Procedures for evaluating test items (point-biserial correlation and p indices) were used to evaluate the validity of the measure of management team situational awareness. Hypothesis testing was conducted employing both logistic regression equations and ordinary least squares regression. A table summarizing the

findings is found in Table 2 below and in Appendix C-13. The implications of these findings are discussed in the following chapter. This discussion includes both theoretical and managerial implications of the findings as well as future research opportunities resulting from the current study.

Table 2- Summary of Hypotheses Testing

	Theoretical Hypothesis	Results	Empirical Support
H1	Management team situational awareness is positively related to strategy-to-market fit.	Supported	Wald = 4.73, p = .029
H2	Management team situational awareness is positively related to tactical alignment.	Supported	$\beta = .396$ p < .001
H3	Management team creative problem solving processes amplify the positive effect of situational awareness on strategy-to-market fit.	Not Supported	Wald = 1.737, p = .188
H4	Management team creative problem solving processes amplify the positive effect of situational awareness on tactical alignment.	Not Supported	$\beta = .030$, p > .05
H5	Management team strategic agreement amplifies the positive effect of team situational awareness on strategy-to-market fit.	Partially Supported	Wald = 2.282, p = .066
H6	Management team tactical agreement amplifies the positive effect of situational awareness on tactical alignment.	Supported	$\beta = .212$, p = .021
H7	Tactical alignment is positively related to return on return on marketing efficiency.	Supported	$\beta = .451$, p < .001
H8	Strategy-to-market fit amplifies the positive relationship of tactical alignment on marketing efficiency	Not Supported	$\beta = .267$, p = .113

Chapter 5 – Conclusions And Implications

CHAPTER OVERVIEW

In today's turbulent and complex marketplace, managers must be able to use customer and competitor information to identify the gaps in the market and the means necessary to fill these gaps. Past research on market orientation has focused mainly on the cultural and information sharing aspects of creating value for customers ultimately resulting in increased financial performance for the focal firm. However, missing from this research are the cognitive aspects of interpreting customer and competitor information in a way that provides the meaning and direction for the management team.

To answer the calls for a cognitive perspective of market orientation, the main purpose of this dissertation was to investigate the question of why some management teams are able to use customer and competitor information to develop accurate and timely responses to changing market conditions and other teams cannot. Specifically, the dissertation sought to identify and measure the relevant constructs that comprise the market opportunity recognition mechanisms. Also, the dissertation sought to determine the how the constructs work together so that market opportunities can be identified and exploited. The context of the study was a business simulation where teams started a personal computer company and competed with other teams for customer demand. This context allowed the researcher to measure the market opportunity recognition mechanisms constructs while the managers were in the act of decision making.

Despite the study's limitations (see next section for the discussion of the study's limitations), several important contributions are made. The key constructs of market opportunity

recognition mechanisms are identified and methods for measuring these constructs were developed and tested. The relationships between these constructs are evaluated via testing in a nomological framework. The results of these tests reveal that management team situational awareness is a key driver of strategy-to-market fit and tactical alignment. These relationships are amplified by team agreement on both the strategic directions and tactical actions that should be pursued for a given set of market conditions. Surprisingly, the main effect of management team situational awareness on strategic and tactical mediators was not amplified by management team creative problem solving. The overall contribution can be characterized as the expansion of market orientation theory through the development of a more complete interpretation construct.

The first chapter of this dissertation highlighted the current state of market orientation research and the need for a more holistic theory which could be made possible by combining MO with the Austrian theory of entrepreneurial discovery. Chapter 2 provided a much more detailed discussion of the relevant literature streams, the conceptual definitions of the constructs comprising market opportunity recognition mechanisms and the conceptual model depicting the relationships between the variables in market opportunity recognition mechanisms. The methodological procedures used to validate market opportunity recognition mechanisms measures and test the proposed hypotheses were outlined in Chapter 3. Chapter 4 provided the results of the tests of the model as well as results of post-hoc data analyses. This chapter concludes the dissertation by discussing how the findings address the research objectives of the study, highlighting the main contributions to theory and practice, acknowledging the limitations of the present study, and identifying avenues for future research on the market opportunity recognition mechanisms phenomenon.

FINDINGS AND DISCUSSIONS

The dissertation had three main research objectives as stated in Chapter 1. As a prelude to the discussion of the research findings, the objectives are re-stated along with the method used to address each objective. This review of the objectives and methods are followed by a more detailed discussion of how the findings from the hypotheses testing address objective three.

The first objective was:

(1) To identify the main constructs that comprise market opportunity recognition mechanisms

This objective was accomplished through a thorough review of the literature as well as multiple interviews with various managers and the observation of groups engaged in the *Marketplace* simulation.

The second objective was:

(2) To develop measures for the MARKET OPPORTUNITY RECOGNITION MECHANISMS constructs

This objective was also accomplished through the qualitative data collected during the study which was used to inform empirical models of construct measurement.

The third research objective was:

- (3) To identify the actual relationships between the key market opportunity recognition mechanisms constructs and how these relationships help managers identify and respond to changes in the market.**

This objective was achieved via the use of the entrepreneurship literature and qualitative data to develop and test the conceptual model found in Chapter 2. This resulted in the tests of Hypotheses 1-8 which are discussed below.

The Impact of Management Team Situational Awareness (Hypotheses 1 and 2)

Hypotheses 1 and 2 posited that management team situational awareness is the main driver of fitting the broad goals of the firm to market conditions (strategy-to market fit) based on the tenets of entrepreneurial discovery theoretical perspective (Hayek 1945; Kirzner 1997). The results of the hypotheses testing strongly support the importance of management team situational awareness. Given the small sample size and large Wald statistic of the test of H1 and the large Beta weight of the H2 test, it is clear that situational awareness is the dominant variable in the market opportunity recognition mechanisms model. No other variable comes close to the explanatory power of the SitAware variable when evaluation of all test statistics is conducted.

The Impact of Management Team Creative Problem Solving (Hypotheses 3 and 4)

Hypotheses 3 and 4 investigated the impact that management team creative problem solving has on the relationship between SitAware and strategy-to-market fit and tactical alignment. Based on the results of the logistic regression and ordinary least squares analyses

neither H3 nor H4 were supported. Assuming that the theoretical model is correct, there is a possible reason for the findings which has to do with measurement error.

The CPS variable was measured by aggregating the perceptual measures of individual team members to create a CPS score. This method of measurement is problematic for several reasons. First, at the individual level the reliability of the CPS measures as indicated by the Cronbach's alpha was low but deemed acceptable due to the fact that it was assumed that some teams might have had fragmented decisions meetings where only a portion of the team was present. Thus, it was possible for some team members to have less than full knowledge of all team discussions. Also the low Cronbach's alpha was deemed acceptable because of the composite nature of the divergent and convergent dimensions of CPS. Like all latent construct measures, the measures had some measurement error at the individual level. The second measurement issue is created in the aggregation process. At the individual level, the measures appeared to have good variance with no evidence of skewness or kurtosis. However, when aggregated to team score, the variance within the CPS score is greatly reduced. The combination of the measurement error at the individual level and the lack of variance at the team level created problematic measures of CPS that is certain to have some impact on the researcher's ability to test H3 and H4. Future research should pursue more valid and reliable measures of CPS so its impact on the other market opportunity recognition mechanisms constructs can be assessed.

In terms of H3 only, the low sample size may also affect the results of the tests. The results of the logistic regression equation produced a Wald statistic of 1.737 and a p-value of .188. Given the low power of the tests, one could argue that the tests are inconclusive as to whether the null hypothesis should be accepted as evidenced by the relatively low .188 p-value.

Future research should seek to increase sample size so that a better assessment of the impact of the interaction between CPS and SitAware on strategy-to-market fit.

The Impact of Management Team Strategic and Tactical Agreement (Hypotheses 5 and 6)

Hypotheses 5 and 6 posited that management team agreement amplifies the positive effect of SitAware on both strategy-to-market fit and tactical alignment. Specifically, H5 argues that management team strategic agreement amplifies the positive effect of SitAware on strategy-to-market fit. The result of the logistic regression analysis finds partial support for this hypothesis. A relatively high Wald statistic (2.72) was produced but was only significant at the .10 level ($p = .066$). However, as mentioned in the discussion of H3 above, the relatively low sample size increases the chances of accepting the null hypothesis which means that given a larger sample size, a significant effect is likely to be found.

H6 posited that the positive effect of SitAware on tactical alignment would be amplified by management team tactical agreement. The results of the OLS regression equation strongly support the hypothesis.

Past research on the importance of management team agreement has been mixed in that in some studies the agreement on both strategy and tactics were thought to be important for aligning resources to fit market conditions. Yet other studies have found that only agreement on means, or tactics, was important for firm success. The results of the present study seem to support the former notion that both are important as the team attempts to use market knowledge structures to formulate appropriate responses to changing market conditions. This is also in line with the social aspects of entrepreneurial discovery which argue that managers need to be in agreement on both the means and ends necessary to succeed in the marketplace (West 2007).

Tactical Alignment and Marketing Efficiency (Hypothesis 7)

The theory of entrepreneurial discovery argues that the proper allocation of resources is how profits are gained or lost by managers attempting to navigate the marketplace. The tests of Hypothesis 7 support this notion that when resources are aligned in fashion that resembles the ideal profile for a given strategy, high firm performance is realized.

In some ways this finding is not altogether unexpected given that past high performing teams were used to develop the ideal tactical profiles for specific strategic types. However, the inclusion of the tactical alignment variable was important for providing the nomological validity of the market opportunity recognition mechanisms model. The fact that the relationship between tactical alignment and marketing efficiency was positive and strong provides further validation of the tactical alignment profiles used in the study.

Strategy-to-market Fit and Tactical Alignment Interaction (Hypothesis 8)

Hypothesis 8 states that the positive relationship between tactical alignment and marketing efficiency would be amplified by strategy-to-market fit. The results of the test of the interaction found a non-significant relationship. Thus, H8 was not supported. However, as mentioned in discussions of preceding hypotheses, the low sample size reduces the power of the tests increasing the likelihood that the null hypothesis would be accepted. A larger sample size may reveal that the interaction is in fact significant given that the p-value for the interaction of H8 was .134 in the present study.

A post-hoc analysis of H8 found that the strategy-to-market fit construct was positively and significantly related to marketing efficiency. In this post-hoc test, both tactical alignment and strategy-to-market fit were entered into a regression equation as independent variables and

marketing efficiency as the dependent variable. The results of the post-hoc test showed that both of the independent variables were significantly related to marketing efficiency (tactical alignment $\beta = .423$, $p < .001$; strategy-to-market fit $\beta = .301$, $p = .001$). Based on the findings of the post-hoc and main tests of H8, future research should pursue a hierarchical method so that a better of assessment of the strategy-to-market fit, tactical alignment and marketing efficiency can be conducted. The results of the present study seems to suggest that both strategy-to-market fit and tactical alignment are both related to marketing efficiency and that when both are high, then performance is even higher. However, this supposition needs to be the subject of future market opportunity recognition mechanisms research.

CONTRIBUTIONS OF THE DISSERTATION

Several important theoretical and managerial contributions emerged as a result of the present study. These contributions are discussed in the following sections.

Theoretical Implications

The theoretical implications of the dissertation can be offered based on the findings of the study. These theoretical implications are especially salient given the research context in which the study was conducted. The following discussion highlights the way the findings of the study fill the existing gaps in research related to market orientation and entrepreneurial discovery. The first two contributions relate to the “macro” theoretical contributions as they outline how the dissertation contributes to the theories of market orientation and entrepreneurial discovery. The remaining points illustrate the theoretical contributions made by some of the more fine grained findings of the study.

1. A more complete model of market orientation’s “interpretation” construct was developed.

The development and testing of the market opportunity recognition mechanisms constructs contributes to the market orientation literature. As mentioned in Chapter 2 market orientation scholars have begun to shift the focus of their research to the interpretation aspects of market orientation. However, the interpretation research to date has been limited and overly simplistic. Hult, Ketchen and Slater (2005) tested a MO model which included an interpretation construct but the operationalization of the construct was a simple self-report measure which asks study participants if the management team “reached a shared understanding of market information”.

The market opportunity recognition mechanisms model developed herein provides much greater detail to the interpretation aspect of MO. Based on the findings of the study, interpretation should be conceptualized as a set of inter-related constructs. The test of the market opportunity recognition mechanisms model shows that interpretation needs to be both accurate and agreed upon by the management team in the course of identifying options for future action and the appropriate means of enactment. Thus future market orientation research should attempt to account for the various facets of interpretation so that market orientation theoretical models are more holistic in scope.

2. A holistic model of market opportunity recognition mechanisms is developed and tested.

The main purpose of the present study was to develop a theoretical model of the cognitive mechanisms at work in management team opportunity recognition. Past research on entrepreneurial discovery have also developed a model of the cognitive mechanisms but as Mitchell et al (2007) point out, most of the cognitive models are vague and incomplete and beg for increase insights so that a more detailed picture of market opportunity recognition mechanisms S can be developed. Past research on opportunity recognition is overwhelmingly conceptual in nature. The present study uses interviews and observations from actual managers caught in the act of thinking through business opportunities to construct the market opportunity recognition mechanisms model. These interviews and observations allowed the researcher to develop more fine grained conceptual definitions of the relevant constructs and more importantly, to identify the mechanisms by which these constructs work together to bring market opportunities to light. Finally, these relationships were also tested which serves as a launching point for future empirical testing necessary to move opportunity recognition forward.

3. The unique method of developing and testing the market opportunity recognition mechanisms model may serve as an impetus for similar methodologies in developing, refining and testing theories involving managerial cognition.

The dissertation utilized a simulated business environment as the context of the study. Surprisingly, relatively few studies have used simulations in marketing research. Even fewer have attempted to use business simulations as a tool for exploring managerial cognition with

notable exceptions coming from Marinova (2003) and Glazer et al (1998). Thus the current study furthers theoretical research on managerial cognition by adding support for simulations as a tool that can be utilized for both theory development and testing in this area. With corporations becoming increasingly guarded against disclosing specific information about day to day operations, it is difficult to get opportunities to collect participant observations in the field. As illustrated by the current study, there are qualitative research opportunities ripe for exploitation by observing participants engaged in business simulations. This should allow future researchers to begin to develop new or refined theories of managerial cognition as opposed to simply borrowing theoretical perspectives developed in other domains.

Empirically, the use of simulations in the current study illustrates the ability to catch managers in the act of thinking so that market opportunity recognition mechanisms related constructs can be more accurately measured and evaluated as well as relationships between variables tested. Specifically, the method used to develop the market opportunity recognition mechanisms model herein is unique in that the managers' knowledge structures of the environment were actually evaluated against an objective truth so accuracy of the management team's mental models could be gauged. Few studies in the management or marketing literature have been able to assess the accuracy of the management team's knowledge structures resulting in studies fraught with self-reports of accuracy and agreement levels. Thus, the main result of this methodology is that the importance of the "knowledge of circumstance" (Hayek 1945; Kirzner 1997) in matching resources to market conditions was tested and supported. In sum, the dissertation contributes to the theoretical aspects of market orientation and entrepreneurial discovery in that it opens new avenues for theory development and testing.

4. The importance of Situational Awareness as a foundational element in managerial cognition is validated.

The “knowledge of circumstances” posited by Hayek (1945) (and later expanded upon by Kirzner (1973) in his development of entrepreneurial discovery) has long been thought to be a key element in successful managerial decision making. However, as mentioned in the opening chapter, little empirical support for this notion has been found in the management or marketing literature. Using work from the aviation industry, this dissertation conceptualized this special knowledge as situational awareness. Situational awareness was defined as the manager’s ability to perceive important elements in the market, to give meaning to these elements through comprehension and to predict how the market may change in future time periods. Research from the aviation industry theorizes that all decision about how to proceed in a given situation spring from situational awareness. This notion is supported in the current study in that awareness about the goings on in the market emerged as a central theme in the observation data gathered and had the most impact when the market opportunity recognition mechanisms model was tested empirically.

Endsley, a prominent scholar in the field of situational awareness, has gone on to posit that over time experts have the ability to move aspects of situational awareness from working memory structures to long-term memory structures which allows the individual to filter and sort information in much more meaningful ways (Endsley 1997). Indirect support for this aspect of situational awareness is found in the current dissertation in that participants were not allowed to consult information sources as they answered questions about the marketplace. As the results of the study show, those managers who were able to recall information about the market, apply

meaning to this information and predict where the market was going all from memory were ultimately more successful in allocating important resources. Thus Endsley's notion of situational awareness being engrained in long-term memory was supported.

5. The importance of goals and tasks agreement expands the concept of interfunctional coordination in market orientation research.

As alluded to previously, the importance of expanding the interpretation concept in market orientation research is a major contribution of the current study. At the individual construct level, the market opportunity recognition mechanisms model helps to expand on the idea of interfunctional coordination. For example, interfunctional coordination as it appears in the extant literature is behavior based operationalized as information and resource sharing behaviors. However, as the results of the test of the market opportunity recognition mechanisms model show, it is important for the interfunctional team to form a shared mental model of the strategic goals the firm should pursue going forward and the actions that should be taken in route to accomplishing these goals. As mentioned in the future research section below, a more complete view of market orientation can be formed by testing the relationship between the traditional view of interfunctional coordination and the strategic and tactical agreement constructs tested in the market opportunity recognition mechanisms model.

6. Agreement on both means and ends is important in managerial team decision making.

In a similar vein, the current study contributes to the literature on managerial consensus. Past studies have found mixed results for the importance of team agreement on the strategic direction of the firm and its impact on firm performance. The current study seems to support the notion that there is not a direct effect between strategic agreement and performance. This is illustrated in the test of H5. However, the results of the current study support an indirect relationship between strategic agreement and performance. The logistic regression equation shows no direct effect of strategic agreement on strategy to market fit. Strategic agreement effects performance of the firm via its effect on the alignment of strategic goals with market conditions when combined with accurate team mental models of the market situation. This interaction effect on strategy-to-market fit helps to reconcile some of the mixed support for the importance of team strategic agreement in generating high firm performance.

The study also contributes to the extant literature on tactical agreement. Past research has shown strong support for team tactical agreement in generating firm performance and the current study indirectly supports this notion as well. As shown in the test of H6, tactical agreement had no direct effect on tactical alignment but the effect was significant when combined with situational awareness. Interestingly, the direct relationship approached significance in that the p-value was .160. Given a larger sample size, the direct relationship between tactical agreement and tactical alignment may indeed be significant which would provide further support for the importance of tactical alignment.

Managerial Implications

The dissertation's stated purpose is exploratory in nature. Thus, any managerial implications resulting from the study's findings should be accepted with caution. However, if the results of future studies support the findings of this dissertation, the following managerial implications may be drawn.

1. Situational awareness is a key aspect in managerial decision making.

The strong support for H1 and H2 suggest that managers should take great effort to “know” their markets and the firm's position in those markets. This is a salient point in a time when managers have a wealth of market information at their fingertips. It was interesting that during one of the qualitative interviews, one of the managers asked about the follow up empirical study and how it would work. When told that respondents would be required to recall market information from memory as a measure of situational awareness, the manager replied “why would they have to do that when all of the information is right there (pointing at his computer) and can be looked up at anytime?” As demonstrated by the study, having the information in an electronic database is not the same as having a high level of situational awareness. The cognitive processing of the information is the key. Therefore managers should be leery of over reliance on data repositories at the expense of truly knowing and understanding what is going on in the marketplace.

Similarly, managers should look for employees who have a high level of situational awareness as they build teams whose purpose is to identify and exploit opportunities. The current study indicates that this ability is important for being able to match resources to the current market environment and should be considered in employee recruitment in conjunction

with traits such as basic intelligence, leadership skills, the ability to work in teams, etc. Perhaps, assessments similar to the assessment of situational awareness found in the current study could prove useful in employee selection and promotion.

2. Agreement on ends and means necessary for opportunity exploitation is important in interfunctional teams.

As managers from various functional units work together, they should strive for strategic and tactical agreement in decision making. The study shows the importance of a shared mental model among team members of the strategic goals that should be pursued and how to achieve these goals based on a given level of situational awareness. This is especially important given that the impact of an action in one functional area can have far reaching implications across other functional areas.

Thus managers should periodically assess the shared mental model of the interfunctional team to ensure that the group shares the same mental model of the strategic goals of the firm and the tactics necessary to implement those goals. Again, the tools and techniques used to assess team strategic and tactical agreement may prove useful to managers overseeing interfunctional teams. Given the prevalence of web-based survey technology, this type of assessment would be easy to perform. Any differences in the mental model could be used as an impetus for the team to pause for in-depth discussions of the differences before moving forward with strategy development or tactical actions.

3. Situational Awareness seems to increase the risk taking behaviors within management teams.

One unintended consequence of the current study was the insight gained in terms of the relationship between risk taking and situational awareness. Based on the operationalization of tactical alignment, the difference between the actions taken by the teams and the actions of the ideal profile for a given strategy, it is apparent that teams with higher situational awareness are more apt to spend greater amounts of resources in the course of daily operations than those that do not. In developing and validating the ideal profiles, it was discovered that the average amount of resources expended by high performing teams was great than the average resources expended by other teams in each strategic type. Therefore, it would appear that situational awareness may actually decrease risk aversion in route to high financial performance. It may be that that situational awareness gives managers the insight needed to see the Type II risk; managers are able to see the impact of *not* acting on an idea as opposed to an over-emphasis on Type 1 risk which is risk of “sinking the boat” due to overspending. Future research is needed to substantiate the claim but at face value, management should seek to build situational awareness in employees to avoid missing out on major opportunities due to risk anxieties.

RESEARCH LIMITATIONS

The findings of the present study should be interpreted with caution as all research suffers from inherent shortcomings that should be acknowledged. The present study is no different in that it suffers from a myriad of shortcomings which include issues with sample size, sample composition, measurement development, data collection, and research context. In addition to these methodological issues, the study also suffers from theoretical limitations.

Methodological Limitations

The sample used in the dissertation presents some potential biases that should be noted. The final sample size was 117 management teams which borders on small relative to the number of hypotheses posited in the theoretical model. In addition to the size of the sample, the composition of the sample may be called into question. The sample was predominantly undergraduate students which can be construed as an unrealistic sample given the managerial nature of the focal phenomenon. However, as shown in the discussion of the results in Chapter 4, there was no significant difference between undergraduates and MBA students in terms of the measures of the independent variables or in the outcomes as found within the *Marketplace* income statements used to measure return on marketing expenditures. Also, the predominantly undergraduate sample may have been beneficial to the present study in that the sample was less likely to have had any formal training in creative problem solving or significant business experience that would have biased the measures of situational awareness. This is particularly relevant to the entrepreneurial discovery literature which suggests that situational awareness may be a trait based construct. Thus, the sample's lack of experience in managerial decision making supports this notion. Finally, past research into managerial decision making has also used undergraduates as an acceptable sample (Gundlach and Cadotte 1994).

A second limitation is the use of perceptual measures of management team creative problem solving. As mentioned in the discussion of results section of this chapter, these perceptual measures are problematic in that students engaged in the simulation may have inflated their reported use of these processes based on the desirability of the measures. Students may have reported that their respective teams used these processes simply because it is believed that they should be using CPS processes. These perceptual measures are also problematic because it

may have been difficult for team members to recall what actually occurred in the course of decision making discussions. The measures of CPS also assume that team members were present at every team meeting when in reality, it may be that different team members met at different time to make decisions. In this case, each respondent does not have full knowledge of discussions that occurred between other team members. Finally, the use of the frequency oriented scales makes these measures troubling given that no measures of the number of meetings held per week per team or the length of meetings were included in the questionnaire as a baseline measure.

The single point-in-time method of data collection is another limitation of the dissertation. As outlined in the methodology discussion in Chapter 3, the data for the present study was collected one time following the 5th decision period. This form of data collection assumes that high levels of management team situational awareness and management team agreement in time period T were present in $T-1$ and will remain high in periods $T+1$. In other words, a static model of the market opportunity recognition mechanisms was tested in the dissertation which fails to account for change in any of the market opportunity recognition mechanisms constructs. It is conceivable that the significant changes in the level of one or all of the market opportunity recognition mechanisms variables could have an effect on the mediating, and ultimately the dependent variables, in the study (Marinova 2005).

The research context in which the study was carried out represents a fourth limitation of the study. Using a simulation provides a controlled setting for the investigation of managerial cognition yet greatly limits the generalizability of the findings. Given the aim of the research, building a theory of market opportunity recognition mechanisms, the generalizability issue is not particularly damaging. However, the managerial implications should be taken with caution until

further investigation of the market opportunity recognition mechanisms constructs can be conducted in field settings and the findings replicated in more realistic arenas.

Theoretical Limitations

It should be noted that the present study was conducted based on a relatively limited nomological model. As mentioned in Chapter 2, the market orientation model is more complicated than simply a theoretical model revolving around interpretation constructs. For example, the cultural and information sharing aspects of past market orientation models were omitted in the dissertation. Venturing outside of the market orientation constructs, one would also find several other market opportunity recognition mechanisms related variables that were not studied in the dissertation (See suggestions for future research below for a discussion of these other variables).

In addition to the simplistic nature of the model tested, the types of relationships between the market opportunity recognition mechanisms constructs represent a theoretical limitation of the study. Management team situational awareness, management team creative problem solving and management team agreement were hypothesized to have linear effects on the mediating variables in the model. However, it is possible that some of these relationships may in fact have a curvilinear effect on these mediators. The oft studied phenomenon of “group think” would suggest that too much agreement on strategy and tactics is actually detrimental to good decision making. Some level of unique perspectives among team members is thought to be helpful in decision making. Likewise too much time spent on creative problem solving processes may actually cause the group to over think potential outcomes resulting in sub-optimal decisions.

Thus, these potential curvilinear effects should be investigated in future studies involving the market opportunity recognition mechanisms constructs.

These limitations of the current study represent potential areas for future research which are discussed below. Before moving into this discussion, it should be acknowledged that the researcher made every effort to insure that the methods used were rigorous and as free from bias as possible.

SUGGESTIONS FOR FUTURE RESEARCH

A discussion of the avenues of future research which have emerged from the present study is presented in this section of the chapter. The discussion is broken into two sections. The first section outlines procedures that can be used to improve future market opportunity recognition mechanisms studies based on the methodological limitations detailed above. From the theoretical limitations, the second future research section highlights ways to extend future research on the market opportunity recognition mechanisms phenomenon.

Research Improvements

Based on the methodological limitations presented above, a number of future research improvements can be identified. First, future research should address the sampling issues of the present study. Follow-up studies should seek a more representative sample using managers who have more experience in managerial decision making. The results of comparisons of undergraduate and manager samples would provide interesting insights into the impact experience may have on the market opportunity recognition mechanisms constructs, particularly situational awareness. The entrepreneurship literature suggests that situational awareness is an inherent trait in individuals based on cognitive abilities. A comparison of experienced versus

non-experienced samples may shed some light on this trait-based argument. In addition to a different sample make up, future studies should seek to increase the sample size such that more rigorous statistical techniques may be used to evaluate construct measures and to test the proposed hypotheses.

Employing a longitudinal methodology would also prove insightful in future studies. Tracking the changes in market opportunity recognition mechanisms variables as opposed to a single-point in time snapshot would allow researchers to track the dynamics of market opportunity recognition mechanisms. These changes could be linked to unexplored variables in hopes of determining antecedents to market opportunity recognition mechanisms changes; namely those variables that lead to increased levels of market opportunity recognition mechanisms variables. Also, a longitudinal study would shed light on the potential causal relationships between the market opportunity recognition mechanisms constructs themselves. For example, research alludes to the point that high levels of CPS in time period T may have contributed to SitAware in time period $T+1$ (Endsley 1995) but to date these potential longitudinal effects have not been empirically supported. These types of relationships should be investigated in future market opportunity recognition mechanisms research.

Future research should attempt to improve the measures of management team creative problem solving. As mentioned in the discussion of the empirical results, the likelihood that CPS has no effect on the relationship between SitAware and tactical and strategic decisions is low given past empirical tests of this aspect of the theory. Likewise, the results of the post hoc tests of the direct relationships of CPS on dependent variables lead the researcher to conclude that the measurement of CPS was misguided. Future research should strive for behavioral measures of the CPS processes versus self-reported perceptual measures.

A final area for research improvements in future studies of market opportunity recognition mechanisms would be to move the research context to a field setting. Replication of the current study using managers engaged in real decision making would provide much improved generalizability to the market opportunity recognition mechanisms theory developed in the dissertation. The tradeoff would be that control over potentially biasing and confounding variables would be greatly reduced but this type of research context greatly increases the realism needed to further validate the market opportunity recognition mechanisms model.

Research Extensions

To address the theoretical shortcomings of the current study, future research should seek to extend the nomological framework so that a more complete model of market opportunity recognition mechanisms is developed and tested. For example, the purpose of this dissertation was to develop a more detailed representation of the interpretation mechanisms necessary to increase the explanatory power of the market orientation theory. Thus, the market opportunity recognition mechanisms model developed herein should be combined with the traditional cultural and information sharing constructs of market orientation in future studies. In other words, are customer orientation, competitor orientation, and information generation and dissemination antecedents to the market opportunity recognition mechanisms as depicted in Figure 1 in Chapter 1?

Outside of the traditional market orientation constructs omitted from the current study, several other related theoretical perspectives should be investigated in tandem with the market opportunity recognition mechanisms model. For example, the current study did not account for the impact of leadership on market opportunity recognition mechanisms. The current study

assumed equality among team members in terms of the contributions each made to the decision making tasks. However, if a team had a particularly strong leader who coordinated the efforts of the other team members then the team as a whole may have had a low SitAware score yet still achieved high levels of the mediating and dependent variables. This begs the questions, how does strong leadership affect the market opportunity recognition mechanisms model and how does leadership change the relationship between market opportunity recognition mechanism and outcome variables?

Similarly, West (2007) builds on Hayek (1945) by arguing that the knowledge of the circumstances used in team decision making is highly fragmented among the managers that comprise the team. In essence, West is arguing for a specialist model of entrepreneurial teams where each member provides idiosyncratic functional knowledge to the group decision making process. The present study does not account for this specialist perspective and instead assumes the opposite. Management team situational awareness was measured as the total number of questions the team answered correctly. However, the specialist approach would account for the functional nature of each question positing that the marketing manager should score higher on the marketing related questions; the manufacturing manager should score higher on questions related to production and so on. Future research should strive to test the generalist versus specialist perspectives and the impact these two different typologies have on the market opportunity recognition mechanisms model.

The affect of management team cognitive style would be an insightful avenue for future research in addition to the impact of team leadership or level of specialization on the market opportunity mechanisms. The market opportunity recognition mechanisms model developed and tested in this dissertation is rooted in situational awareness which is thought to be a cognitive

ability which is not the same as cognitive style. Entrepreneurship researchers have suggested that cognitive style is another aspect of entrepreneurial cognition in need of further investigation (Mitchell et al 2007). According to Kirton (1987), cognitive style is conceptualized as the approach people bring to problems. Cognitive style is operationalized as a continuum ranging from adaptive style on one end of the spectrum and innovative style on the other. Future studies should incorporate this aspect of cognition so that more holistic model of market opportunity recognition mechanisms can be developed and tested.

A last area ripe for future research relates to the creative problem solving construct of the market opportunity recognition mechanisms model. Amabile, one of the preeminent scholars on creativity in business, has identified several key antecedents to creative problem solving processes (Amabile et al 1996). These antecedents include the perception of available resources, workload pressures, the challenge of the task, time pressure, autonomy, work group encouragement for creativity, and organizational impediments to creativity. None of these antecedents were present in the current study and represent important variables to be included in future studies of market opportunity recognition mechanisms. Similarly, the effect of training should be investigated as an antecedent to the market opportunity recognition mechanisms. In other words, can market opportunity recognition mechanisms be taught or is it truly a trait based phenomenon which has been assumed to this point in the literature.

CONCLUDING REMARKS

The research goal of this dissertation was to explore more detailed conceptualizations of the components that make up the interpretation construct emerging in market orientation

research. By building and testing a model of market opportunity recognition mechanisms this dissertation contributes to both the market orientation and entrepreneurial discovery research.

The author would also like to acknowledge the impressive body of work in market orientation and entrepreneurial discovery culminated through the exhaustive efforts of many intelligent and skillful researchers who have delved into the interpretation phenomenon. It is from their wisdom that this dissertation was conceived and undertaken.

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Appendices

Appendix A: Qualitative Interview Information

Appendix A-1: Descriptions of Interview Participants

Name	Details
Dave	Director of Engineering; 40 years experience; Working on a line extension in response to competitors offering; Industrial equipment manufacturer
Bruce	Chief Operating Office; 6 years of experience; Working on a new to the world technology in the early stages of product launch; Tele-Com equipment company
Tom	Founder and President; 28 years of experience; Started a software firm that develops and markets special effects graphical software;
Malcolm	Direct of Engineering and R&D; 20 years of experience; Working on a new to the world product in response to major client request; Industrial equipment manufacturer
Chris	Director of Innovation and R&D; 20 years of experience; Working on new to the firm products by leveraging existing technologies as well as technologies prevalent on other industries. Pet safety manufacturing firm.

Appendix A-2: Qualitative Interviews; Interview Guide

- 1. Tell me what the term “opportunity” means to you?**
- 2. Tell me about a recently discovered opportunity for your firm where you have had direct involvement?**
- 3. Tell me how the opportunity was discovered?**
- 4. What were the processes involved in evaluating the opportunity?**
- 5. Are there any formal processes for identifying and evaluating opportunities here at XYZ Corporation?**
- 6. What are some of the informal processes that help in identifying and evaluating opportunities at XYZ Corporation?**
- 7. How does XYZ Corporation insure that employees are aware of what is going on in the marketplace?**

***** Most of these questions will be expanded upon as participants cite specific examples.**

“Please tell me more about that” will be the common question used to dig deeper into participant answers.

Appendix A-3: Trustworthiness of Qualitative Study: Interpretive Criteria

Trustworthiness Criteria	Method of Assessment of Criteria Used in this Study
<p>Credibility Extent to which the results appear to be acceptable representations of the data</p>	<ul style="list-style-type: none"> • 1-page summary of initial interpretations was provided to two of the participants for feedback. Comments from participants helped to refine some of the themes and dimensions.
<p>Transferability Extent to which the findings from one study in one context will apply to other contexts</p>	<ul style="list-style-type: none"> • The coding process sought to look for connections between the interview data such that common themes and dimensions were identified regardless of idiosyncratic contexts.
<p>Dependability Extent to which the findings are unique to time and place; the stability or consistency of explanations</p>	<ul style="list-style-type: none"> • Participants reflected on many experiences covering recent events as well as long past events. • Common interview guide was used for all interviews • Again, consistency in themes and dimensions was found across participants' reflections of opportunity recognition.
<p>Confirmability Extent to which interpretations are the result of the participants and the phenomenon as opposed to researcher biases</p>	<ul style="list-style-type: none"> • Two interview participants gave feedback regarding themes and dimensions formulated by the researcher. • This criterion needs further assessment as no outside researcher has reviewed the coding scheme used to develop themes and dimensions.
<p>Integrity Extent to which interpretations are influenced by misinformation or evasions by participants</p>	<ul style="list-style-type: none"> • Interviews were conducted using an open-ended question format that allowed the participants to discuss anything they felt relevant to the domain of opportunity recognition. • Interview data seems free of evasiveness or that the participants were not at liberty to disclose information relating to opportunity recognition within their respective firms.
<p>Fit Extent to which findings fit with the substantive area under investigation.</p>	<ul style="list-style-type: none"> • Researcher attempted to actively listen to the interview participant's comments and follow up, clarifying questions were asked to confirm that the interviewee was reflecting on opportunities as related to the study.
<p>Understanding Extent to which participants buy into results as possible representations of their worlds.</p>	<ul style="list-style-type: none"> • Executive summary of findings presented to two participants who provided additional feedback and clarification related to the themes and dimensions identified in the study.

Appendix B: Pre-test Item Pool

Appendix B-1: List of Divergent Thinking Processes Items

Divergent Processes	Pre-test C	Pre-test D	Final Survey (Item #)
asked “what-if” questions about the marketplace.	X		
discussed how our strengths could be used to build competitive advantages	X	X	
developed different combinations of possible features for our products	X	X	
asked ourselves if we have considered all options for solving problems	X		
listed our company’s weaknesses relative to the market	X	X	
tried to understand the relationship between new products and manufacturing decisions	X		
analyzed the reasons behind past performance of various competitors	X		
drew pictures or diagrams to help us understand the relationship between two unique functional areas.	X	X	
listed our company’s strengths relative to the market	X		
developed a list of ways we could attack gaps in the marketplace	X	X	X(DV9)
talked about how a change in one person’s area impacts another person’s area	X		
analyzed different combinations of brands to produce and market	X	X	X (DV1)
challenged each other's assumptions about the market	X	X	X (DV13)
analyzed our team's position in the market from multiple perspectives	X		
used examples of tactics from real companies in coming up with possible moves in our market	X	X	X (DV7)
created very detailed scenarios of how a new product would impact the market	X		
focused on the same problems over and over	X		
developed different scenarios of how the market place might change in future quarters	X		
reevaluated our assumptions when we are confused about events in the market	X		
thinking through many different strategic options based on where we were positioned in the marketplace	X		
developing different combinations of possible features for our advertisements	X		
played devil's advocate trying to find flaws in our own plans	X	X	X (DV11)

Appendix B-1: List of Divergent Thinking Processes Items (Cont.)

thinking about the ways we could attack new market segments	X	X	
having conversations that led to “ah ha” moments; those times when figuring out how to move forward suddenly made sense.	X		
thinking through how advertisements and product features might work together	X		
trying to figure out how new technologies might boost our products	X	X	
imagined how copying competitors would change our market position	X	X	X (DV3)
discussed how our weaknesses were holding us back	X	X	

Appendix B-2: List of Convergent Thinking Processes Items

Convergent Processes	Pre-test C	Pre- test D	Final Survey (Item #)
analyzed multiple pro-forma accounting scenarios as a way of picking the best option for moving forward	X	X	
analyzed the likelihood that our ideas would actually work	X	X	X (CV1)
tried to determine if our firm has the resources necessary to act on the idea	X	X	X (CV2)
tried to determine if a potential decision will help us reach our goals.	X	X	X (CV3)
determining the financial impact of our decision options	X		
thinking about how much our ideas would cost the company	X		
trying to figure out how to work around any financial constraints our firm might have had	X		
thinking through the impact our ideas would have on manufacturing	X		
only thinking about the revenue our ideas would generate for the firm	X		
only thinking about the profits our ideas would generate for the firm	X		
trying to figure out which one of our ideas seemed the most logical	X		
thinking through what would happen if WE DID NOT make changes to our products, prices or ads.	X		
coming up with multiple measures of success	X		
used different financial scenarios to gauge the impact of different ideas on our performance	X	X	X (CV4)
tried to determine how potential decisions might impact our balanced score card performance	X	X	X (CV5)
evaluated each other's decisions in regardless of our own respective functional areas	X	X	X (CV 6)
used the amount of revenue a decision would generate as a the main way of evaluating ideas	X	X	

Appendix B-3: Table of Teams Used to Build Strategic Type Profiles

<u>Strategic Type</u>	<u>Quantity in Pre-test D Data Set</u>
Broad Differentiators	30
Broad Cost-Leaders	25
Narrow Differentiators	22
Narrow Cost-Leaders	23
Hybrid	15

Appendix B-4: Tactical Alignment Ideal Profile Dimensions and Averages by Strategic Type

	Top Broad Price Leaders Average	Average Broad Diff Leaders	Hybrid Average	Narrow Diff Leaders	Narrow Price Leaders
# of Brands for Sale					
Q6	4	3	4	4	2
Q7	3	3	5	5	3
Q8	4	4	6	6	3
Brand Updates (Number of new brands)					
Q6	3	2	3	2	1
Q7	2	2	2	2	1
Q8	1	3	3	1	1
# of R&D Features in Brands					
Q6	2	2	2	1	1
Q7	3	3	4	2	2
Q8	3	6	5	3	3
Short Term Debt Ratio:					
Q6	11.65	35.20	42.8	0	13.3
Q7	19.82	29.27	40.83	46.16	4.8
Q8	18.48	34.93	35.76	36.2	0
Sales Offices:					
Q6	7	10	7	6	5
Q7	9	12	10	9	7
Q8	14	15	13	12	11

Appendix B-4: Tactical Alignment Ideal Profile Dimensions and Averages by Strategic Type (Continued)

	Top Broad Price Leaders Average	Average Broad Diff Leaders	Hybrid Average	Narrow Diff Leaders	Narrow Price Leaders
Sales Reps:					
Q6	55	89	88	53	46
Q7	85	143	130	91	60
Q8	161	230	221	143	109
Amount spent on Quality					
Q6	\$527,000	\$624,152	\$702,597	\$528,852	\$335,113
Q7	\$673,000	\$809,841	\$890,364	\$799,537	\$573,039
Q8	\$826,000	\$919,652	\$1,024,068	\$761,697	\$605,949
Amount spent on Changeover					
Q6	\$487,500	\$275,000	\$275,000	\$383,333	\$66,667
Q7	\$475,000	\$475,000	\$400,000	\$375,000	\$516,667
Q8	\$575,000	\$400,000	\$375,000	\$381,667	\$233,333
Plant Capacity					
Q6	125	131	200	125	133
Q7	206	275	294	183	133
Q8	381	456	444	283	233

Appendix B-5: Details of Strategy-to-Market Fit Calculations

* Strategy-to-market fit was calculated by assessing the fit between the strategy a team pursued through quarters 6-8 and the ideal strategy they should have pursued given the firm's strengths and weaknesses coming out of Q5. Thus, an ideal strategy had to be determined by the researcher. To make the determination, a heuristic was used that was based on a firm's relative market position in terms of resources, marketing capabilities and manufacturing capabilities. Relative position was determined based on the firm's calculation relative to the industry average of each respective characteristic mentioned above. The actual heuristic is found in the following appendix. Below is how each of these respective metrics was calculated for each team.

Resources:

$$(1) R_{j Q5} = FR_{j Q5} + LA_{j Q5}$$

Where:

R = firm's total available resources

FR = firm's available financial resources

LA = firm's leverageable assets

j = firm 1, firm 2, firm 3...firm n

$$(2) FR_{j Q5} = C_{j Q5} + D_{j Q5}$$

Where:

FR = firm's available financial resources

C = firm's ending cash balance

D = firm's total debt capacity

j = firm 1, firm 2, firm 3...firm n

Appendix B-5: Details of Strategy-to-Market Fit Calculations (Cont.)

$$(3) LA_{jQ5} = MC_{jQ5} * SO_{jQ5} * WC_{jQ5} * RDF_{jQ5}$$

Where:

MC = firm's available manufacturing capacity

SO = firm's operational sales offices

WC = firm's operational web-sales centers

RDF = firm's available R&D technologies

j = firm 1, firm 2, firm 3...firm n

Marketing Capability (Generated by *Marketplace* software package):

Market Appeal in segment i =

(highest brand judgment in segment i /100

x price judgment for brand with the highest brand judgment/100

x reliability judgment/100

x advertising appeal in segment i

x proportion of all sales people in segment i)

x 100

Manufacturing Capability:

Manufacturing Capability = Average Cost of Goods Sold

Appendix B-5: Details of Strategy-to-Market Fit Calculations (Cont.)

Categorization Heuristic for Decision-Tree Heuristic below:

Resources		
IF...	Then	Category
Firm j resources = +/- 10% of industry average		Average
Firm j resources < 90% of industry average		Low
Firm j resources > 110% of industry average		High
Marketing Capability		
IF...	Then	Category
Firm j marketing appeal < industry average		Low
Firm j marketing appeal > industry average		High
Manufacturing Capability		
IF...	Then	Category
Firm j manufacturing capability > industry average		Low
Firm j manufacturing capability < industry average		High

Appendix B-6: Ideal Strategy Based on Market Position Decision Tree Heuristic

Ideal Strategy Heuristic						
IF...	&	IF...	&	IF...	THEN	Ideal Strategy
Resources are Low		Market Appeal is Low		Manufacturing Capability is High		Narrow Cost Leadership
Resources are Low		Market Appeal is Low		Manufacturing Capability is Low		Narrow Cost Leadership
Resources are Low		Market Appeal is High		Manufacturing Capability is Low		Narrow Differentiator
Resources are Average		Market Appeal is Low		Manufacturing Capability is High		Broad Cost Leadership
Resources are Average		Market Appeal is Low		Manufacturing Capability is Low		Broad Cost Leadership
Resources are Average		Market Appeal is High		Manufacturing Capability is Low		Broad Differentiator
Resources are Average		Market Appeal is High		Manufacturing Capability is High		Broad Cost Leadership / Differentiator
Resources are High		Market Appeal is Low		Manufacturing Capability is High		Hybrid
Resources are High		Market Appeal is Low		Manufacturing Capability is Low		Hybrid
Resources are High		Market Appeal is High		Manufacturing Capability is Low		Hybrid
Resources are High		Market Appeal is High		Manufacturing Capability is High		Hybrid

Appendix B-7: ANOVA of Pre-test Strategy-to-Market Fit Heuristic

Descriptives

ROME

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0	51	3.3513	.76880	.12311	3.1021	3.6005	1.52	5.03
1	64	4.0017	1.36116	.16883	3.6644	4.3390	1.73	7.79
Total	115	3.7578	1.21218	.11886	3.5221	3.9935	1.52	7.79

ANOVA

ROME

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.311	1	10.311	7.457	.007
Within Groups	141.036	115	1.383		
Total	151.347	115			

Appendix C: Final Study Information

**Appendix C-1: Descriptive Statistics for Managerial Team Creative Problem Solving (CPS)
Final Measures**

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std.	Statistic	Std.
								Error		Error
DV_1#	552	1.00	5.00	3.5305	1.11989	1.254	-.387	.116	-.554	.231
DV_3#	552	1.00	5.00	3.7810	1.12334	1.262	-.782	.116	-.114	.231
DV_13#	552	1.00	5.00	3.4989	1.03857	1.079	-.332	.116	-.454	.231
DV_11#	552	1.00	5.00	3.3318	1.15165	1.326	-.174	.116	-.875	.231
DV_7#	552	1.00	5.00	2.3995	1.35229	1.829	.592	.116	-.913	.231
DV_9#	552	1.00	5.00	3.7607	1.03408	1.069	-.680	.116	-.121	.231
CV_1#	552	1.00	5.00	4.0339	.89049	.793	-.935	.116	.889	.231
CV_2#	552	1.00	5.00	4.0203	.93307	.871	-.729	.116	-.088	.231
CV_3#	552	1.00	5.00	4.0361	.90926	.827	-.779	.116	.135	.231
CV_4#	552	1.00	5.00	3.7472	1.04609	1.094	-.492	.116	-.512	.231
CV_5#	552	1.00	5.00	3.6800	1.09123	1.103	-.519	.116	-.513	.231
CV_6#	552	1.00	5.00	3.8668	1.01698	1.034	-.586	.116	-.431	.231
Valid N (listwise)	552									

Appendix C-2: Factor Analysis and Reliability Analysis for CPS Measures

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	3.615	32.865	32.865	3.615	32.865	32.865	2.847	25.881
2	1.690	15.361	48.226	1.690	15.361	48.226	2.458	22.346	48.226
3	.881	8.012	56.238						
4	.774	7.033	63.272						
5	.743	6.757	70.029						
6	.668	6.074	76.103						
7	.612	5.561	81.664						
8	.586	5.331	86.995						
9	.536	4.877	91.872						
10	.486	4.415	96.287						
11	.408	3.713	100.000						

Extraction Method: Principal Component Analysis.

Appendix C-2: Factor Analysis and Reliability Analysis for CPS Measures (Cont.)

Rotated Component Matrix^a

	Component	
	1	2
DV7	.730	.087
DV1	.706	.203
DV3	.691	.070
DV11	.674	.074
DV13	.642	.215
DV10	.607	.097
CV3	.197	.733
CV2	.115	.696
CV4	.210	.679
CV1	.052	.675
CV6	.060	.636
CV5	.092	.609

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Appendix C-2: Factor Analysis and Reliability Analysis for CPS Measures (Cont.)

Reliability

Case Processing Summary

		N	%
Cases	Valid	552	100.0
	Excluded ^a	0	0.0
	Total	552	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.772	.793	12

Inter-Item Correlation Matrix

	DV1	DV3	DV7	DV10	DV11	DV13	CV1	CV2	CV3	CV4	CV5	CV6
DV1	1.000	.401	.434	.380	.340	.413	.244	.138	.117	.095	.218	.222
DV3	.401	1.000	.387	.366	.514	.341	.233	.252	.138	.142	.294	.176
DV7	.434	.387	1.000	.385	.311	.314	.184	.200	.143	.071	.144	.240
DV10	.380	.366	.385	1.000	.382	.271	.144	.128	.061	.164	.232	.321
DV11	.340	.514	.311	.382	1.000	.266	.291	.160	.162	.185	.231	.152
DV13	.413	.341	.314	.271	.266	1.000	.200	.106	.156	.125	.156	.247
CV1	.244	.233	.184	.144	.291	.200	1.000	.427	.398	.368	.417	.314
CV2	.138	.252	.200	.128	.160	.106	.427	1.000	.323	.327	.373	.283
CV3	.117	.138	.143	.061	.162	.156	.398	.323	1.000	.250	.290	.193
CV4	.095	.142	.071	.164	.185	.125	.368	.327	.250	1.000	.398	.281
CV5	.218	.294	.144	.232	.231	.156	.417	.373	.290	.398	1.000	.226
CV6	.222	.176	.240	.321	.152	.247	.314	.283	.193	.281	.226	1.000

**Appendix C-3: Point-Biserial Correlations for Managerial Team Situational Awareness
(SitAware) Items**

Item #	Point Bi-Serial Correlation	Item #	Point Bi-Serial Correlation
2.10	0.1949	6.1	0.1783
2.20	0.1540	6.2	0.1115
2.30	0.2270	6.3	0.2793
2.40	0.1902	6.4	0.1018
2.50	0.2294	6.5	0.2043
2.60	0.1553	6.6	0.1236
2.70	0.2735	6.7	0.1777
2.80	0.1981	7.1	0.2346
2.90	0.2672	7.2	0.1288
2.10.1	0.1137	7.3	0.0968
3.10*	0.0286	7.4	0.1965
3.20*	0.0489	7.5	0.1384
3.30*	0.0389	7.6	0.1615
3.50*	-0.0475	7.7	0.1792
3.60*	0.1644	7.8	0.1425
3.70*	0.1391	7.9	0.1754
3.80*	0.0103	7.1	0.2688
3.90*	-0.0396	7.11	0.1923
4.10	0.1279	7.12	0.1878
4.20	0.1168	7.13	0.1281
4.40	0.1575	7.14	0.1434
4.50	0.1080	7.15	0.1899
4.60	0.1270	7.16	0.1167
4.70	0.1617	7.16.5	0.1848
4.80	0.1460	7.17	0.2403
5.10	0.1700	7.18	0.1956
5.20	0.1859	7.19	0.1749
5.40	0.1812	7.2	0.1762
5.50	0.1249	7.21	0.1387
5.60	0.1690		
5.70	0.1724		
5.10	0.1582		
5.11	0.1904		
5.12	0.1964		
5.13	0.1096		
5.15	0.1138		
5.16	0.0989		
5.17	0.1470		
5.18	0.1880		
5.19	0.1640		
5.20	0.1512		

* Indicates items not used in final analysis.

Appendix C-4: P-indices for SitAware Items

* Items not included in final analysis

** Represents the difference in the percentage of participants who answered the item correctly between the two groups

Item	Top 25% vs Middle 50%**	Top 25% vs Bottom 25%**
2.1	11.14%	22.13%
2.2	14.70%	24.43%
2.3	27.39%	39.82%
2.4	17.24%	28.75%
2.5	21.46%	32.93%
2.6	14.60%	18.36%
2.7	27.09%	41.05%
2.8	3.89%	20.67%
2.9	28.59%	36.20%
2.1	12.14%	16.81%
*3.1	-1.55%	10.11%
*3.2	8.62%	15.22%
*3.3	9.19%	12.46%
*3.5	2.34%	-0.73%
*3.6	24.09%	30.60%
*3.7	11.20%	22.77%
*3.8	2.31%	7.81%
*3.9	3.25%	3.54%
4.1	11.18%	23.67%
4.2	6.52%	24.65%
4.4	13.80%	18.41%
4.5	4.80%	9.82%
4.6	17.69%	19.34%
4.7	1.01%	12.68%
4.8	2.09%	13.74%
5.1	11.67%	22.10%
5.2	9.61%	31.33%
5.4	24.53%	32.60%
5.5	3.37%	21.12%
5.6	13.18%	25.16%
5.7	11.55%	20.06%
5.1	8.96%	16.78%

Appendix C-4: P-indices for SitAware Items (Cont.)

Item	Top 25% vs Middle 50%**	Top 25% vs Bottom 25%**
5.11	18.27%	19.10%
5.12	15.19%	30.42%
5.13	5.40%	14.48%
5.15	22.61%	26.99%
5.16	3.40%	8.38%
5.17	16.16%	26.01%
5.18	0.39%	7.24%
5.19	19.60%	24.59%
5.2	12.26%	30.20%
6.1	22.37%	28.80%
6.2	8.49%	18.17%
6.3	38.38%	40.30%
6.4	4.34%	27.64%
6.5	26.41%	36.66%
6.6	2.46%	28.62%
6.7	4.46%	16.23%
7.1	12.46%	34.42%
7.2	11.50%	25.31%
7.3	2.41%	2.77%
7.4	25.86%	28.66%
7.5	18.16%	30.44%
7.6	8.30%	28.29%
7.7	25.15%	26.27%
7.8	9.28%	13.38%
7.9	14.49%	25.26%
7.1	25.54%	30.67%
7.11	20.49%	26.41%
7.12	10.39%	26.07%
7.13	21.65%	24.61%
7.14	11.50%	26.15%
7.15	14.28%	16.91%
7.16	13.10%	16.33%
7.16.5	7.40%	10.10%
7.17	20.44%	27.12%
7.18	13.52%	24.12%
7.19	21.44%	32.35%
7.2	13.82%	20.26%
7.21	18.74%	26.00%

Appendix C-5: Logistic Regression Results for Hypothesis 1

Dependent Variable = Strategy-to-Market Fit

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	117	100.0
	Missing Cases	0	.0
	Total	117	100.0
Unselected Cases		0	.0
	Total	117	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable

Encoding

Original Value	Internal Value
0	0
1	1

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	5.079	1	.024
	Block	5.079	1	.024
	Model	5.079	1	.024

Appendix C-5: Logistic Regression Results for Hypothesis 1 (Cont.)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	135.225 ^a	.048	.064

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	7.789	8	.454

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	SitAware	.472	.216	4.763	1	.029	1.603
	Constant	.412	.206	4.015	1	.045	1.510

Appendix C-6: Ordinary Least Squares Regression Results for Hypothesis 2

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	SitAware		. Enter

a. All requested variables entered.

b. Dependent Variable: Tactical Alignment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.396 ^a	.157	.148	.92277

a. Predictors: (Constant), SitAware

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.147	1	16.147	18.963	.000 ^a
	Residual	96.853	116	.852		
	Total	117.000	117			

a. Predictors: (Constant), SitAware

b. Dependent Variable: Tactical Alignment

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.003	.090		.032	.975		
	SitAware	.400	.092	.396	4.355	.000	1.000	1.000

a. Dependent Variable: Tactical Alignment

Appendix C-6: Ordinary Least Squares Regression Results for Hypothesis 2 (Cont.)

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	PTS_REV_STD
1	1	1.007	1.000	.50	.50
	2	.993	1.007	.50	.50

a. Dependent Variable: Tactical Alignment

Appendix C-7: Logistic Regression Results for Hypothesis 3

Dependent Variable = Strategy-to-Market Fit

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	117	100.0
	Missing Cases	0	.0
	Total	117	100.0
Unselected Cases		0	.0
	Total	117	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable

Encoding

Original Value	Internal Value
0	0
1	1

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	6.905	3	.075
	Block	6.905	3	.075
	Model	6.905	3	.075

Appendix C-7: Logistic Regression Results for Hypothesis 3

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	133.399 ^a	.064	.087

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	11.903	8	.156

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	SitAware	.451	.226	3.980	1	.046	1.570
	CPS	.020	.216	.009	1	.925	1.021
	SAXCPS	.329	.250	1.737	1	.188	1.389
	Constant	.352	.212	2.766	1	.096	1.422

Appendix C-4: Ordinary Least Squares Regression Results for Hypothesis 4

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	SxACS, SitAware, CPS ^a		Enter

a. All requested variables entered.

b. Dependent Variable: Tactical Alignment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.458 ^a	.210	.186	.90214

a. Predictors: (Constant), SxACS, SitAware, CPS

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.552	3	7.205	8.852	.000 ^a
	Residual	92.448	114	.814		
	Total	117.000	117			

a. Predictors: (Constant), SxACS, SitAware, CPS

b. Dependent Variable: Tactical Alignment

Appendix C-4: Ordinary Least Squares Regression Results for Hypothesis 4 (Cont.)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.004	.088		.042	.967		
	SitAware	.461	.090	.456	5.130	.000	1.000	1.000
	CPS	.045	.093	.043	.485	.629	.991	1.009
	SAxCPS	.029	.087	.030	.335	.738	.991	1.009

a. Dependent Variable: Tactical Alignment

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	SitAware	CPS	SAxCPS
1	1	1.093	1.000	.00	.00	.45	.46
	2	1.008	1.042	.43	.56	.00	.00
	3	.995	1.048	.56	.41	.02	.01
	4	.904	1.100	.01	.03	.53	.53

a. Dependent Variable: Tactical Alignment

Appendix C-9: Logistic Regression Results for Hypothesis 5

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	117	100.0
	Missing Cases	0	.0
	Total	117	100.0
Unselected Cases		0	.0
	Total	117	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable

Encoding

Original Value	Internal Value
0	0
1	1

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	7.356	3	.061
	Block	7.356	3	.061
	Model	7.356	3	.061

Appendix C-9: Logistic Regression Results for Hypothesis 5 (Cont.)

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	132.948 ^a	.078	.099

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	6.622	8	.578

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1	SitAware	.554	.229	5.873	1	.015	1.740
	TSA	.256	.221	1.335	1	.248	.774
	SAXTSA	.250	.214	2.823	1	.188	.899
	Constant	.467	.214	4.748	1	.029	1.595

Appendix C-10: Ordinary Least Square Regression Results for Hypothesis 6

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	SAXTTA, TTA, SitAware ^a		Enter

a. All requested variables entered.

b. Dependent Variable: Tactical Alignment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.514 ^a	.264	.242	.87057

a. Predictors: (Constant), SAXTTA, TTA, SitAware

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.908	3	9.070	11.967	.000 ^a
	Residual	86.091	114	.758		
	Total	103.000	117			

a. Predictors: (Constant), SAXTTA, TTA, SitAware

b. Dependent Variable: Tactical Alignment

Appendix C-10: Ordinary Least Square Regression Results for Hypothesis 6 (Cont.)

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.040	.087		-.461	.646		
	SitAware	.400	.090	.396	4.424	.000	.918	1.090
	TTA	.126	.089	.126	1.414	.160	.933	1.072
	SAxTTA	.170	.070	.212	2.446	.016	.982	1.018

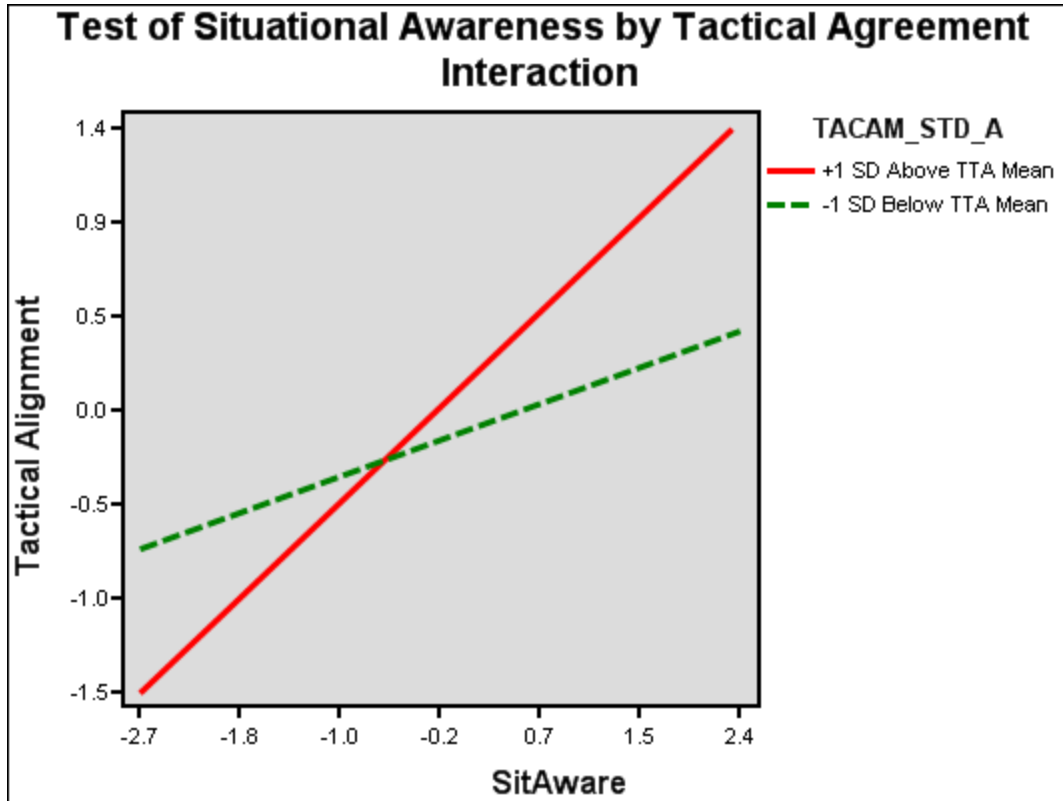
a. Dependent Variable: Tactical Alignment

Collinearity Diagnostics^a

Model	Dimensi on	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	SitAware	TTA	SAxTTA
1	1	1.301	1.000	.06	.29	.22	.15
	2	1.169	1.055	.34	.07	.15	.24
	3	.840	1.245	.46	.10	.24	.32
	4	.691	1.372	.14	.53	.39	.29

a. Dependent Variable: Tactical Alignment

Appendix C-10: Ordinary Least Square Regression Results for Hypothesis 6 (Cont.)



Appendix C-11: Ordinary Least Square Regression Results for Hypothesis 7 and Sobel Test Results for Tactical Alignment Mediation

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Tactical Alignment		Enter

a. All requested variables entered.

b. Dependent Variable: ROME

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.451 ^a	.204	.196	.89676

a. Predictors: (Constant), Tactical Alignment

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.824	1	20.973	26.080	.000 ^a
	Residual	93.176	116	.804		
	Total	117.00	117			

a. Predictors: (Constant), Tactical Alignment

b. Dependent Variable: ROME

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.983	.212		-4.645	.000		
	Tactical Alignment	.009	.002	.451	5.107	.000	1.000	1.000

a. Dependent Variable: ROME

Appendix C-11: Ordinary Least Square Regression Results for Hypothesis 7 and Sobel Test Results for Tactical Alignment Mediation (Cont.)

Collinearity Diagnostics^a

Model	Dimensi on	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Tactical Alignment Score
1	1	1.910	1.000	.05	.05
	2	.090	4.597	.95	.95

a. Dependent Variable: ROME

Sobel Test of Mediation Results (Test of the mediating relationship of Tactical Alignment between SitAware and ROME).

Inputs		Sobel Test Statistic	p-value
Raw (unstandardized) regression coefficient for the association between SitAware and Tactical Alignment	0.401	2.7395	0.0064
Standard error of regression coefficient for the association between SitAware and Tactical Alignment	0.092		
Raw coefficient for the association between the Tactical Alignment and ROME (when the SitAware is also a predictor of ROME).	0.321		
Standard error of the coefficient for the association between the Tactical Alignment and ROME (when the SitAware is also a predictor of ROME).	0.091		

Appendix C-12: Ordinary Least Squares Regression Results for Hypothesis 8

MODEL SUMMARY

R: 0.556195442

R Square: 0.309353369

R Square Adjusted: 0.288633970

Standard Error of the Estimate: 0.843425176

R Square Contribution of the Interaction Term: 0.015707233

NOTE: Dependent Variable = ROME

Moderator = STMF

Interaction Term = Tactical Alignment

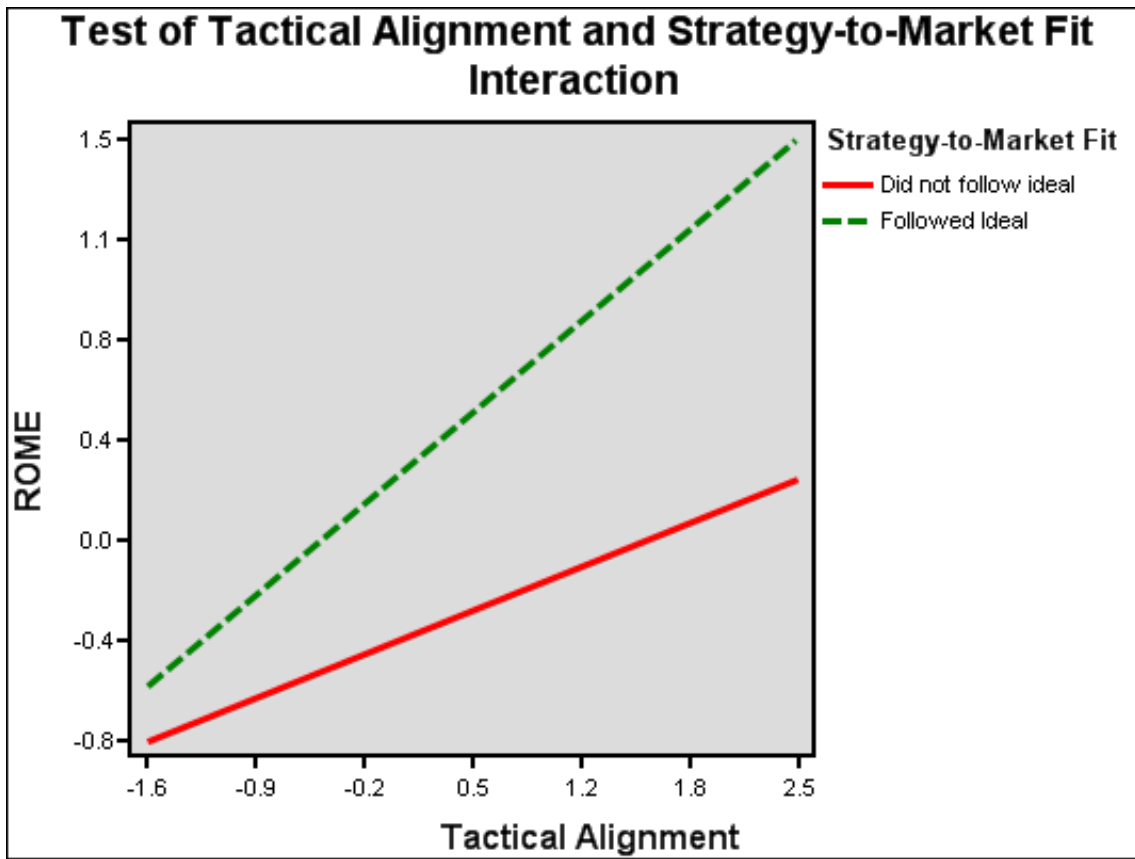
MODEL ANALYSIS OF VARIANCE

	Sum of Squares	Degrees of Freedom	Mean Square	F	Sig.
Regression:	36.195	3	10.621	14.930	$p < .001$
Residual:	80.804	114	0.711		
Total:	117.000	117			

MODEL COEFFICIENTS

	B	Std Error	t	Significance
(Regression Constant):	-0.384	0.131	-2.933	0.0041
TAS__STD_A:	0.244	0.144	1.684	0.0950
Match:	0.624	0.169	3.685	0.0003
Interaction Term:	0.267	0.177	1.508	0.1134

Appendix C-12: Ordinary Least Squares Regression Results for Hypothesis 8 (Cont.)



Appendix C-13: Hypothesis Testing Summary

	Theoretical Hypothesis	Results	Empirical Support
H1	Management team situational awareness is positively related to strategy-to-market fit.	Supported	Wald = 4.73, p = .029
H2	Management team situational awareness is positively related to tactical alignment.	Supported	$\beta = .396$ p < .001
H3	Management team creative problem solving processes amplify the positive effect of situational awareness on strategy-to-market fit.	Not Supported	Wald = 1.737, p = .188
H4	Management team creative problem solving processes amplify the positive effect of situational awareness on tactical alignment.	Not Supported	$\beta = .030$, p > .05
H5	Management team strategic agreement amplifies the positive effect of team situational awareness on strategy-to-market fit.	Partially Supported	Wald = 2.282, p = .066
H6	Management team tactical agreement amplifies the positive effect of situational awareness on tactical alignment.	Supported	$\beta = .212$, p = .021
H7	Tactical alignment is positively related to return on return on marketing efficiency.	Supported	$\beta = .451$, p < .001
H8	Strategy-to-market fit amplifies the positive relationship of tactical alignment on marketing efficiency	Not Supported	$\beta = .267$, p = .113

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants

Marketplace Assurance of Learning Assessment

Thanks for taking the time to fill out this assessment. It should take 25 to 35 minutes to complete.

Our goal in having you take this assessment is to determine how well you are using the tools of management and to stimulate your thinking about the marketplace in which you compete. The assessment should also provide some insights into how you and your group spend your time.

DO NOT USE THE MARKETPLACE SOFTWARE TO LOOK UP ANSWERS TO THE QUESTIONS. If you are unsure about any of the answers, make an educated guess. Do not leave any answer blank.

After you complete this questionnaire, we will compare your answers to the actual numbers for your industry and company and give you a score as to how well you know what is going on. You will also be given a report showing how your responses compared to your teammates. Before getting into the main part of the assessment, we ask that you provide some basic information (team name, your position in the firm, etc).

Please keep in mind that the AOLA has no direct impact on your grade. However, taking the time to fill out the AOLA should help your performance on the simulation.

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participant (Continued)

Section I. Basic Information

1 Firm Name:

- Empire
- Microboard Corp
- Micronetik
- Pinnacle Technologies
- Prodigy Innovations

2 Primary Contribution: In which of the following functional areas do you contribute the most to the firm's decisions?

- Marketing
- Sales Management
- Finance and Accounting
- Manufacturing

3 Secondary Contribution: In which of the following functional areas do you make a significant, but secondary, contribution to the firm's decisions?

- Marketing
- Sales Management
- Finance and Accounting
- Manufacturing

4 Select the segment that your firm targeted as your primary segment in Q5 (ie.the segment that your firm has placed the most emphasis on in terms of marketing efforts, sales priority, manufacturing priority etc.).

- CostCutter
- Innovators
- Mercedes
- Work Horse
- Traveler

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participant (Continued)

5 Select the segment that your firm targeted as your secondary segment in Q5.

- CostCutter
- Innovators
- Mercedes
- Work Horse
- Traveler

6 Before moving on to the next section, please provide a little background information.

How many years of work experience do you have?

7 How many different firms have you worked for in your career?

8 Please select the functional area that best describes the areas that you have worked in during your career. Select all that apply.

- Marketing
- Sales and/or Sales Management
- Manufacturing
- Logistics
- Product Design
- Human Resources
- Finance and/or Accounting
- Information Technology
- Other
- No business experience

9 What type of education program are you involved in while playing the Marketplace simulation?

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participant (Continued)

- Undergraduate Program - Business Major
- Undergraduate Program- Non-Business Major
- MBA - Full Time Program
- MBA - Evening or Weekend Program
- MBA - Executive Program
- Masters of Accounting Program
- Corporate Management Training Program
- Undergraduate - Other
- Masters Program - Other

Continue

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Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participant (Continued)

Section II.

The goal of this section is to determine how well you know your competition and your performance relative to them. For this section, please answer the questions based on the results of Q5. This is section 2 of 9

1 Please answer the questions based on the results of Q5. Make sure to consider all competitors as well as your own firm when answering the following questions.

There may be multiple leaders for a given question. As long as you select one of the firms that are leading in that particular area, then you will receive credit for a correct answer.

	Empire	Microboard Corp	Micronetik	Pinnacle Technologies	Prodigy Innovations
Which firm spent the most on advertising in Quarter 5?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm had the best ad rating in your primary target segment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm had the highest brand rating in your primary target segment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm had the largest number of sales offices in Quarter 5?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm had the highest reliability rating based on Q5 results?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm do you think had the lowest average per unit production cost?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm had the highest financial performance score on the Q5 balanced score card?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm had the highest average sales price across all brands?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm had the lowest average sales price across all brands?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consider all of the brands that appeal to your primary segment (brand judgment = 68 or greater). Which firm had the lowest price among this set of brands?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participant (Continued)

Section III. Potential Competitive Threats

The goal of this section is to determine if you are aware of which firms made the biggest changes in the market from Q4 to Q5. If it is not your firm, then these actions probably represent competitive threats. This is section 3 of

- 1 In this section, please answer the questions based on how the market changed between Q4 and Q5. This is section 3 of 9.

There may be multiple leaders for a given question. As long as you select one of the firms that are leading in that particular area, then you will receive credit for a correct answer.

	Empire	Microboard Corp	Micronetik	Pinnacle Technologies	Prodigy Innovations
Which firm had the highest percentage growth in total demand between Q4 and Q5?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm made the largest increase in its brick and mortar sales force between Q4 and Q5?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm made the largest increase in fixed capacity between Q4 and Q5?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm dropped its prices the most between Q4 and Q5?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm had the largest increase in total advertising expenditures between Q4 and Q5?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm opened the most new sales offices between Q4 and Q5?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm had the largest increase in sales force productivity between Q4 and Q5?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm had the largest improvement in financial performance on the balanced score card form Q4 to Q5?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Continue

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Appendix C-14: Final Questionnaire as Presented to Marketplace Participants (Continued)

Section IV.

The goal of this section is to measure your ability to predict where you think your competitors will be in Q6. Your strategy and tactics in Q6 should reflect what you think the competition is going to do, not just what it has done in the past. This is section 4 of 9.

1 Please answer the questions based on what you think the results of Q6 will be. Again, consider all competitors as well as your own firm when selecting your answers.

There may be multiple leaders for a given question. As long as you select one of the firms that are leading in that particular area, then you will receive credit for a correct answer.

	Empire	Microboard Corp	Micronetik	Pinnacle Technologies	Prodigy Innovations
Which firm will have the highest ad judgment in your primary target segment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm will have the highest brand rating in your primary target segment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm will have the highest reliability rating this quarter?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm will have the highest financial performance score on the Q6 balanced score card?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm will have the lowest average price in Q6?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm will have the greatest fixed capacity in Q6?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Which firm will have the most brick and mortar sales representatives in Q6?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Continue Reset

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants (Continued)

Section V.

An important aspect of the management of any firm is to have a good understanding of its strength and weaknesses. In this section, please indicate whether your actions and performance in Q5 represent strengths or weaknesses when compared to the competition. In simple terms, is your firm below or above the market average?

1 In Quarter 5...	Weakness Strength	
Our average per unit cost of production compared to the market average was a...	<input type="radio"/>	<input type="radio"/>
The quality of our products (as indicated by your reliability rating relative to the market average) was a...	<input type="radio"/>	<input type="radio"/>
Our willingness to promote our products to the marketplace (as indicated by your total advertising spending relative to the industry average) was a ...	<input type="radio"/>	<input type="radio"/>
Our aggressiveness in hiring new sales representatives (as indicated by the total number of brick and mortar sales people in your firm relative to the market average) was a ...	<input type="radio"/>	<input type="radio"/>
Our ability to generate demand compared to the industry average was a...	<input type="radio"/>	<input type="radio"/>
Our ability to compete on brand selection (as indicated by number of brands that your firm offers compared to the average for the industry) was a...	<input type="radio"/>	<input type="radio"/>
Our aggressiveness in attacking new markets (as indicated by the number of new sales offices opened relative to the market average) was a ...	<input type="radio"/>	<input type="radio"/>
Our ability to offer after-sale customer support in sales offices (as indicated by whether you employed more or less service people than the market average) was a...	<input type="radio"/>	<input type="radio"/>
Our capacity to knock on doors and call on potential customers in our primary target segment (as indicated by the total number of sales people dedicated to your primary target segment relative to the market average) was a ...	<input type="radio"/>	<input type="radio"/>
Our investments in the future (as indicated by our expenditures for new sales outlets, new brands, R&D for new brand features, changeover improvements, and quality control) were a...	<input type="radio"/>	<input type="radio"/>
Our gross profit margin compared to the gross profit margins of our competitors was a...	<input type="radio"/>	<input type="radio"/>
If we had had a large demand, our capacity (factory capacity compared to the market average) was a...	<input type="radio"/>	<input type="radio"/>
Our manufacturing productivity as (indicated by your average manufacturing productivity on the balanced score card relative to the competition) was a...	<input type="radio"/>	<input type="radio"/>

The satisfaction of our sales people with their compensation package as (indicated by your firm's sales force productivity compared to the market average) was a...



Our ability to compete on brand performance in our primary target segment (as indicated by having the best or second best rated brand in the segment) was a...



Our ability to compete on brand performance in our secondary target segment (as indicated by having the best or second best rated brand in the segment) was a...



Continue

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Appendix C-14: Final Questionnaire as Presented to Marketplace Participants (Continued)

Section VI.

As you prepare to wrap up Q6, the goal of your firm should be to maintain your strengths while turning weaknesses into strengths. In this light, can you predict what your strengths and weaknesses will be in Q6? In this section, please indicate whether your actions and performance in Q6 will be strengths or weaknesses.

1 In Q6...

	Weakness	Strength
Our willingness to promote our products to the marketplace (as indicated by your total advertising spending in Q6 relative to the market average) will be a ...	<input type="radio"/>	<input type="radio"/>
Our ability to compete on brand selection (as indicated by the number of brands that your firm offers compared to the typical firm) will be a...	<input type="radio"/>	<input type="radio"/>
Our ability to generate demand compared to the industry average will be a...	<input type="radio"/>	<input type="radio"/>
Our average per unit cost of production in Q6 relative to the market average will be a...	<input type="radio"/>	<input type="radio"/>
The quality of our products (as indicated by your reliability rating in Q6 relative to the market average) will be a ...	<input type="radio"/>	<input type="radio"/>
Our aggressiveness in hiring new sales representatives (as indicated by the total number of brick and mortar sales people in your firm in Q6 relative to the market average) will be a ...	<input type="radio"/>	<input type="radio"/>
Our gross profit margin compared to the gross profit margins of our competitors will be a...	<input type="radio"/>	<input type="radio"/>

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Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants (Continued)

Section VII.

Good management requires not only high-level performance evaluations, but detailed tactical assessments. How well do you know your tactical decisions and how good have these decisions been? In this section, please answer the questions based on your actions and performance in Q5. Hang in there...this is section 7 of 9.

1 Which of your brands contributed the most to the profitability of your firm in Quarter 5?

- The Aviator
- The Aviator +
- The Stallion
- The Stallion +

2 Which brand created the most demand for your company?

- The Aviator
- The Aviator +
- The Stallion
- The Stallion +

3 Were the answers to question 1 and question 2 the same? In other words, was your most demanded brand also your most profitable (in terms of profit dollars) of all of your brands?

- Yes
- No

4 In question 1 above, you listed your firm's most profitable brand. What was the average per unit production cost for this brand? (enter an amount excluding commas or currency sign, ex. 1200)

5 Did the brand which created the most profit for the company also receive the largest number of advertisements?

- Yes
- No

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants (Continued)

6 Which of your brands was the **least** profitable for your company?

- The Aviator
- The Aviator +
- The Stallion
- The Stallion +

7 By this point in the life of your company, all of the brands that your firm actively sells should be profitable. In other words, all of your brands should make a positive contribution on your brand profitability report. (Exclude brands that are not being produced and you are just selling off inventory.) If this was not true in Quarter 5, it was a weakness. Was this a strength or weakness for your company in Q5?

- Weakness
- Strength

8 Looking to Quarter 6, what do you predict? Will all of your brands be profitable?

- Yes
- No

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants (Continued)

9 Which of your sales offices generated the largest demand?

- New York
- Atlanta
- Chicago
- Los Angeles
- Montreal
- Toronto
- Calgary
- Vancouver
- Curitiba
- Rio de Janeiro
- Sao Paulo
- Belo Horizonte
- Paris
- Rome
- Berlin
- London
- Shanghai
- Tianjin
- Guangzhou
- Beijing

10 What is your firm's average demand per sales person for all sales offices?

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants (Continued)

11 Which geographic region contributed the most to the profitability of your firm in Quarter 5?

- United States
- Canada
- Brazil
- Europe
- China

12 In Q5, did the region which created the most profit also have the most sales people?

- Yes
- No

13 Did the region which created the most profit also receive the largest number of advertisements?

- Yes
- No

14 Which segment generated the largest demand for your firm?

- CostCutter
- Innovators
- Mercedes
- Work Horse
- Traveler

15 In Q5, did the segment which created the largest demand also have the largest number of sales people devoted to it?

- Yes
- No

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants (Continued)

16 How many lost sales (stock outs) did your firm have in Q5 because it did not have sufficient inventory to meet demand? (Please answer in number of units)

17 How much money was tied up in inventory at the end of last quarter? In other words, how much money was in the inventory ledger item on the balance sheet?(enter the amount excluding commas or the currency sign, ex. 100000)

18 What percentage of market share did your firm have in your primary target segment? (Enter the number without the percent symbol, i.e. 33)

19 What percentage of market share did your firm have in your secondary target segment? (Enter the number without the percent symbol, i.e. 33)

20 What was your firm's total revenue in Q5? (Enter the amount excluding commas or the currency sign)

21 What was your net profit in Q5? (Enter the amount excluding commas or the currency sign, ex. 100000). If negative, be sure to enter a negative sign in front of the number.

22 If you wanted to avoid competitors, to which region would you go because it has the fewest number of firms already selling in it?

- United States
- Canada
- Brazil
- Europe
- China

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants (Continued)

Section VIII.

Given what you know about the industry and your position in the market, what strategy and tactics should you adopt as you go forward with your business? First, consider the appropriate overall strategy for your firm going forward then consider which tactics would provide the best support for the strategy selected.

This is section 8 of 9.

1 Which of the following segments will you pursue over the next few quarters?

You may plan to continue with the segments that you are currently targeting, change segments, or add new segments.

You are not limited to two segments so check all that apply.

- Cost Cutter
- Innovator
- Mercedes
- Work Horse
- Traveler

2 If you are going to pursue the **Cost Cutter** segment, how will you obtain a competitive advantage given what you know about the market and your firm's strengths and weaknesses? Which of the following strategies will you pursue over the next few quarters?

- Not pursuing the Cost Cutter segment
- Focus on offering lower prices.
- Focus on offering superior products.
- Focus on offering both superior products and lower prices

3 If you are going to pursue the **Innovator** segment, how will you obtain a competitive advantage given what you know about the market and your firm's strengths and weaknesses? Which of the following strategies will you pursue over the next few quarters?

- Not pursuing the Innovator segment
- Focus on offering lower prices.
- Focus on offering superior products.
- Focus on offering both superior products and lower prices.

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants (Continued)

4 If you are going to pursue the **Mercedes** segment, how will you obtain a competitive advantage given what you know about the market and your firm's strengths and weaknesses? Which of the following strategies will you pursue over the next few quarters?

- Not pursuing the Mercedes segment
- Focus on offering lower prices.
- Focus on offering superior products.
- Focus on offering both superior products and lower prices.

5 If you are going to pursue the **Workhorse** segment, how will you obtain a competitive advantage given what you know about the market and your firm's strengths and weaknesses? Which of the following strategies will you pursue over the next few quarters?

- Not pursuing the Workhorse segment
- Focus on offering lower prices.
- Focus on offering superior products.
- Focus on offering both superior products and lower prices.

6 If you are going to pursue the **Traveler** segment, how will you obtain a competitive advantage given what you know about the market and your firm's strengths and weaknesses? Which of the following strategies will you pursue over the next few quarters?

- Not pursuing the Traveler segment
- Focus on offering lower prices.
- Focus on offering superior products.
- Focus on offering both superior products and lower prices.

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants (Continued)

7

Future Tactics

Given the strategies you selected above, please indicate which of the following tactics will be the most appropriate going forward.

MARKETING

When it comes to segments, we should...

- Focus on smaller, high margin segments
- Focus on large, highly competitive segments
- Choose market segments that provide synergy in brand design, advertising, manufacturing

8 When it comes to brands, we should..

- Develop a "best brand" for each segment
- Develop brands that can serve more than one segment
- Develop a portfolio of brands for each segment

9 When it comes to product quality, we should...

- Deliver premium products regardless of cost.
- Deliver good quality products to keep unit costs manageable.

10 When it comes to R&D, we should

- Choose a limited set of high value R&D projects
- Invest heavily in new technology to maximize customer value
- Partner with competitors to share development costs

11 When it comes to prices we should...

- Price aggressively, be the low price provider
- Price competitively, follow market prices
- Skim the cream – be the profit margin leader

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants (Continued)

12 MANUFACTURING

When it comes to factory worker compensation, we should...

- Offer generous compensation packages to increase factory worker motivation & productivity
- Offer competitive compensation packages to control factory worker costs
- Offer lean compensation packages to minimize factory worker costs

13 When it comes to investments in fixed capacity, we should...

- Invest heavily in plant capacity in anticipation of demand
- Invest in plant capacity only after demand is proven

14 When it comes to production quality, we should...

- Vigorously pursue zero defects and high reliability – invest heavily in quality control
- Spend money to improve the most glaring defects only.

15 When it comes to managing production, we should...

- Aggressively pursue lean, flexible manufacturing - invest heavily to minimize changeovers
- Improve efficiency by limiting the number of brands
- Reduce brand features in order to lower per unit production costs

16 SALES MANAGEMENT

When it comes to opening new sales offices, we should...

- Focus on the markets which have the greatest sales potential
- Focus on markets that economize operating, shipping and marketing costs
- Focus on markets that minimize competition
- Focus on markets with the strongest competition

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants (Continued)

17 When it comes to sales force compensation, we should...

- Offer generous compensation packages to increase sales force motivation and productivity
- Offer competitive compensation packages to control sales force costs
- Offer lean compensation packages to minimize sales force costs

18 When it comes to distribution, we should...

- Pursue intensive distribution (open many sales outlets quickly)
- Pursue selective distribution (open small number of high profit outlets)

19 FINANCE

When it comes to managing our finances, we should...

- Be willing to take financial risks
- Be financially conservative
- Take a moderate position on financial risk

20 When it comes to debt, we should...

- Minimize debt to reduce financial dependence & interest
- Maximize leverage (debt) to take advantage of opportunities
- Use debt only as insurance when financial projections suggest that there is some risk that we may run out of cash at the end of the quarter

21 When debt is required, we should...

- Try to use short-term debt
- Try to use long-term debt

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants (Continued)

22 When it comes to managing our cash, we should...

- Maximize liquidity. (Keep lots of cash in bank to reduce the risk of the unknown)
- Do not leave cash idle – invest early and often.

Continue

Reset

Appendix C-14: Final Questionnaire as Presented to *Marketplace* Participants (Continued)

Section IX.

You are almost finished. Please provide some information on the processes you and your team use to evaluate the market and make decisions. This is section 9 of 9.

- 1** Given the amount time you spent in Q5 and Q6, answer the following questions relating to how your team spent its time. Please rate each item in comparison to other processes your group used to make decisions. In other words, which of the following activities did your team spend more time on than others?

Keep in mind that there are no right or wrong answers so please answer the questions based on what your team actually did, not on what you think your team should have done.

During our team meetings we...

	We spent very little time on this compared to other activities 1	2	3	4	We spent a great deal of time on this compared to other activities 5
analyzed different combinations of brands to produce and market	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
discussed how our weaknesses were holding us back	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
imagined how copying competitors would change our position in the market	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
analyzed the likelihood that our ideas would actually work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
discussed how our strengths could be used to build competitive advantages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
developed a list of gaps we saw in the marketplace	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
tried to determine if our firm has the resources necessary to act on our ideas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
tried to determine if a potential decision will help us reach our goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
analyzed our position in the market from multiple perspectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
used examples of tactics from real companies in coming up with possible moves in our market.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

developed different scenarios of how the marketplace might change in future quarters	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
analyzed the reasons behind the past performance of various competitors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
talked about how a change in one person's area impacts another person's area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
played devil's advocate trying to find flaws in our own plans	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
imagined how our position in the market would be different if we fixed our weaknesses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
used different financial scenarios to gauge the impact of different ideas on our performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
challenged each others' assumptions about the market	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
tried to determine how potential decisions might impact our balanced score card performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
discussed how our strengths would help us in attacking new segments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
evaluated each others' decisions in our respective functional areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Continue

Vita

Frederick L. Bonney is an assistant professor of marketing at Florida State University. He holds a Bachelor of Business Administration from the University of Tennessee and a Master of Business Administration from the University of Georgia. His primary research interests fall under the areas of corporate entrepreneurship, solutions marketing and sales force management, with a focus on entrepreneurial behaviors in the sales force. He has taught classes in Demand Management, Selling & Sales Force Management, and Global Marketing Strategy. Prior to pursuing a PhD in marketing at the University of Tennessee, Frederick spent 8 years in sales and sales management for Fortune 500 companies in the industrial services and pharmaceutical industries.