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A Contemporary Examination of the Miles and Snow Strategic Typology Through the Lenses of Dynamic Capabilities and Ambidexterity

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A CONTEMPORARY EXAMINATION OF THE MILES AND SNOW STRATEGIC
TYPOLOGY THROUGH THE LENSES OF DYNAMIC CAPABILITIES AND
AMBIDEXTERITY

by

Marc Sollosy

A Dissertation

Presented in Partial Fulfillment of Requirements for the

Degree of

Doctor of Business Administration

in the

Coles College of Business

Kennesaw State University

Kennesaw, GA

2013

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Coles College of Business
Doctor of Business Administration

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DEDICATION

I dedicate this work to my loving wife, Lois who supported me throughout this journey. Her sacrifices during this period in our lives were boundless. She has been and will continue to be a source of inspiration and support as we begin the next stage in our life's journey together.

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ABSTRACT

A CONTEMPORARY EXAMINATION OF THE MILES AND SNOW STRATEGIC TYPOLOGY THROUGH THE LENSES OF DYNAMIC CAPABILITIES AND AMBIDEXTERITY

by
Marc D. Sollosy

This study's focuses on the examination of the Miles and Snow typology through the lenses of dynamic capabilities with a particular emphasis on ambidexterity. While each element of the typology has received varying degrees of study in both the management and marketing literature, to date, no study has examined the typology, as first proposed by Miles and Snow under the influence of either dynamic capabilities or ambidexterity. This study proposes to examine the alignment of the three elements of the typology with each other and the four strategic archetypes identified by Miles and Snow. It was Hambrick's observation in his 2003 commentary "*On the staying power of defenders, analyzers and prospectors*" that served as the impetus of this study. From both a managerial and research perspective, the proposed study furthers the understanding of the strategic archetypes and important drivers of a sustained competitive advantage.

The study of 503 diverse firms specifically finds that how an organization addresses it's entrepreneurial, engineering, and administrative domains influences and helps to explain its resulting strategic archetype. Additionally, the study supports the position that consistency matters. Organizations that are consistent in their approach to the various domains outperform those whose approach is less consistent. Contributing to the on-going discussion around strategy and structure, the results support the contention

that defining the business focus, or the entrepreneurial domain, is the primary determinant of the organization's strategic archetype. It further shows that the decisions regarding how, the engineering domain, impacts the business focus decision tempers the ultimate strategic archetype. In general, the analysis demonstrates the enduring value of the Miles and Snow typology, and how the lenses of dynamic capabilities and ambidexterity further the explanatory power of the typology.

Keywords: Miles and Snow, strategic orientation, resource based view (RBV), dynamic capabilities, adaptive capability, absorptive capability, innovative capability, ambidexterity, competitive advantage

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CHAPTER 1: INTRODUCTION

Above average business performance is a prerequisite for an organization to achieve a sustainable competitive advantage. Such performance requires an organization to develop dynamic capabilities that are valuable, rare, inimitable, and nonsubstitutable in support of their business strategy (Barney, 1991). Many authors have presented theories and models examining and explaining how organizations go about achieving a sustainable competitive advantage. Over the last three decades, the strategic typology posited by Miles and Snow (1978) has received wide spread general acceptance within the fields of strategic management and organizational theory (Hambrick, 2003). The typology's longevity and brilliance is attributed to its innate parsimony, industry-independent nature, and that it corresponds with the actual strategic positioning of firms across a multitude of industries and countries (Hambrick, 2003). Their typology has important implications for managers and scholars alike because it appears to well represent the generic approaches to business strategy. This widely embraced typology has been the subject of extensive research attention in both the management and marketing strategic literature, as shown in the following table.

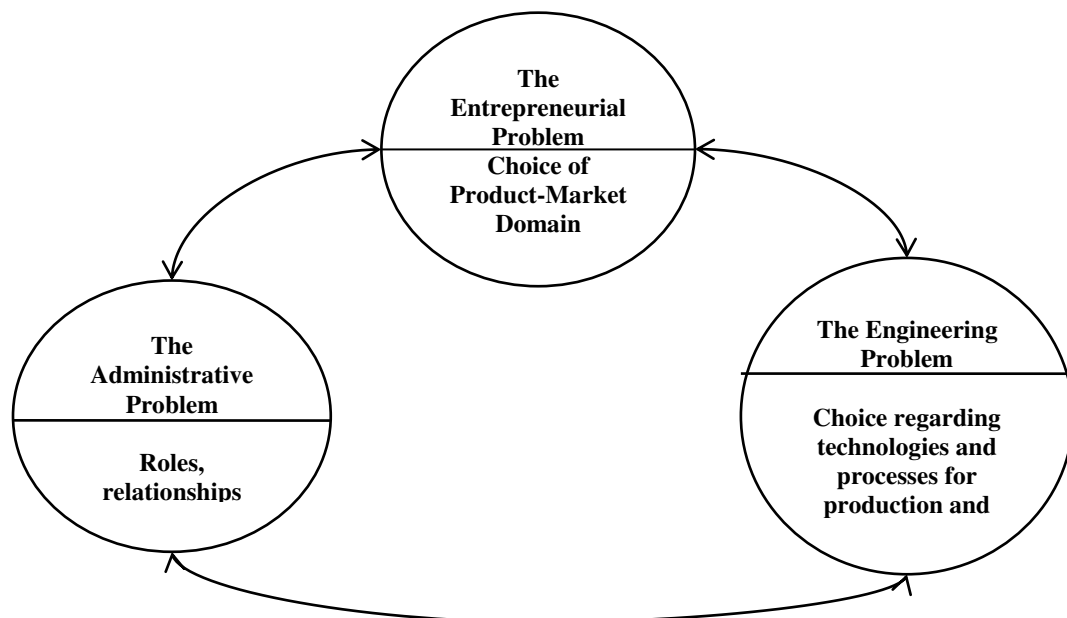
Table 1: Major Studies of the Miles and Snow Typology

Authors	Focus of the research
Conant, Mokawa, and Varadarajan (1990)	Develops a multi-item scale operationalizing the Miles and Snow strategic typology. Studies the relationship between strategic types, distinctive marketing competencies, and organizational performance.
Hambrick (1983)	Tests and extends the Miles and Snow typology by exploring the effectiveness of strategic types in different environments. Additionally, examines the differences in the attributes of Defenders and Prospectors.
McDaniel and Kolari (1987)	Examines the typology as it relates to the field of marketing strategy. Their results provide support for the applicability of the typology to the area of marketing strategy.
McKee, Varadarajan and Pride (1989)	Examines the effectiveness of the Miles and Snow strategic typology within the frame of dynamic markets and volatility.
Ruekert and Walker (1987)	Examines the extent of interdepartmental conflict and the structures used to manage and resolve conflict between marketing and R&D.
Shortell and Zajac (1990)	Examines the reliability and validity of various measures utilized to develop the archetypes of the Miles and Snow typology.
Di Benedetto and Song (2003)	Examines the importance of different bundles of firm-level capabilities relative to the different archetypes of the Miles and Snow strategic types.
DeSarbo, Di Benedetto, Song and Sinha (2005) (Desarbo et al., 2005)	Utilizes a quantitative typology to examine the differences in strategic capabilities, performance and environmental factors as they relate to the Miles and Snow strategic types.
DeSabro, Di Benedetto, Jedidi and Song (2006)	Utilizes a constrained latent structure structural equation based method to empirically estimate an ‘optimal’ typology. They derive a four mixed-type solution that improves upon the Miles and Snow typology in terms of statistical fit.

The Miles and Snow model subjectively classifies organizations, based on their patterns of strategic decisions, into four categories: Prospector, Analyzer, Defender, and

Reactor (DeSarbo et al., 2006). Miles and Snow (1978) posited that three of the four identified strategic archetypes; Prospector, Analyzer, and Defender, should perform well, and should outperform the fourth type, Reactor, due to its lack of a consistent strategy (2005). The typology as posited by Miles and Snow (1978) presents strategy as a collection of decisions, including capability orientations, utilized by the business unit to align its management processes with its environment. Principle among these capabilities is the organization's orientation towards: selecting and adjusting its product-market domain, what Miles and Snow identified as the entrepreneurial problem; how the organization goes about producing and delivering its products and services, the engineering problem; and how the organization establishes roles, relationships and organizational processes, the administrative problem. Figure 1 presents the cyclical relationship between these capabilities.

Figure 1: Capabilities Relationship



In their classic study, Miles and Snow (1978) categorize organizations as Prospectors, Analyzers, Defenders and Reactors based upon their approach in addressing the aforementioned identified capabilities. Additionally, they posit that the first three archetypes, Prospectors, Analyzers, and Defenders, will opt for different strategic approaches. Prospectors tend to be more innovative and seek out new markets, Analyzers are followers in that they opt for a “second-but-better” strategy, and Defenders usually remain focused on maintaining a secure niche in a relatively stable product or service area. Reactors, on the other hand, respond inconsistently to challenges, with a short-term orientation driven by environmental dependence. Miles and Snow (1978) further posit that each of the first three archetypes can be successful if the organization matches its strategy to the competitive environment, and develops and deploys the appropriate capabilities, while Reactors will tend to be the least successful due to their apparent inability to align their strategy with the competitive environment.

Capabilities entail “complex bundles of skills and accumulated knowledge that enable firms to coordinate activities and make use of their assets” (Day, 1990 p. 38). Day (1994 p. 40) further suggests, “It is not possible to enumerate all possible capabilities, because every business develops its own configuration of capabilities that is rooted in the realities of its competitive market, past commitments, and anticipated requirements”. According to the resource-based view (RBV), (Barney, 1986b; 1991; Wernerfelt, 1984) firms deploy these capabilities and their resources strategically.

The manner by which these distinct capabilities are exploited may well allow for the creation of a sustainable competitive advantage. However, many scholars (e.g., Teece, Pisano, & Shuen, 1997) suggest that distinct capabilities are not sufficient unto

themselves. That organizations need to “integrate, build, and reconfigure internal and external capabilities to address rapidly changing environments” (p. 516). As such, the capabilities themselves may help the organization perform better, but the performance is further improved by those organizations that have the ability to put their capabilities to the best use. Hitt and Ireland (1985) suggest that organizations that best develop and manage their resources and capabilities will outperform their competition over time.

Research in the sphere of dynamic capabilities, an evolutionary extension of the RBV, stress utilizing organization specific capabilities to address changing environments (Teece et al., 1997). Dynamic capabilities emphasize developing management capabilities, and inimitable combinations of organizational, functional and technical skills. Dynamic capabilities extend the RBV perspective in two ways; first, the dynamic aspect refers to an organization’s ability to renew competencies or capabilities to keep pace with changing business environments. This renewal often requires innovative responses when time-to-market and timing are critical elements, when the rate of technological change is rapid or accelerating, and when the nature of future markets and competition is uncertain. Second, capabilities emphasizes the role of strategic management in appropriately adapting, integrating and reconfiguring both internal and external organizational skills, resources and function to match the requirements of a changing environment (Teece et al., 1997).

Dynamic capabilities recognize that organizations need to both adapt and create new competencies and capabilities to be competitive. The ambidextrous orientation is an extension of dynamic capabilities and explicitly requires an organization to be capable of both exploiting existing (internal) competencies, as well as exploring new (external)

opportunities. March (1991) argued that the two concepts of exploitation and exploration should be viewed as dichotomous ends on a single continuum. Others characterize exploration and exploitation as independent activities, orthogonal to each other. In this view, organizations can choose to engage in high levels of both learning activities simultaneously (Gupta, Smith, & Shalley, 2006). Consistent with this latter view, this paper considers ambidexterity as the capacity of an organization to pursue high levels of exploration and exploitation concurrently, as opposed to managing trade-offs in an attempt to find the most appropriate balance between them (Cao, Gedajlovic, & Zhang, 2009).

In his academic commentary on the staying power of the Defender, Analyzer, and Prospector, Hambrick (2003 p.118) suggests “a third [research] opportunity is to address the practical challenges of pursuing the most complicated of Miles and Snow’s strategic types: the Analyzer.” He then goes on to “pity” top managers in an Analyzer organization because “they are walking a tightrope, trying to be innovative at the same time they are trying to be efficient and reliable” (Hambrick, p. 118). The ability of an organization to manage this apparent paradox is the essence of organizational ambidexterity (Duncan, 1976). Organizations need the ability to generate new knowledge in support of new products and services while simultaneously leveraging current competencies in the exploitation of existing products and services (Danneels, 2002). Tushman and O’Reilly (1996) posit that in order for an organization to survive and prosper, it must excel at both exploration and exploitation.

Miles and Snow (1978) identify operating characteristics of the strategic archetypes in terms of their entrepreneurial, engineering (operational), and administrative

capabilities and approach. Subsequent studies (e.g. Benedetto and Song, 2003; Conant et al., 1990; DeSarbo et al., 2005; DeSarbo et al., 2006; Hambrick, 1983) have examined the archetypes through a variety of different lenses. Significantly, dynamic capabilities, particularly with an emphasis on ambidexterity, have not been utilized as the foundation to any study of the typology.

This study examines the relationship between an organization's dynamic capabilities and ambidextrous orientation and resulting strategic type, as identified in the Miles and Snow typology (1978). Utilizing the organizational ambidexterity orientation and dynamic capabilities literature, I develop hypotheses examining the relationships between the Miles and Snow strategic types and an organization's ambidextrous orientation. There is little, to no, extant literature examining the Miles and Snow (1978) typology utilizing the lens of dynamic capabilities, with specific emphasis on ambidexterity. This gap ignores how the typology continues to maintain its relevance thirty years after Miles and Snow first postulated it. This research spans the gap by demonstrating in a unique way how dynamic capabilities and ambidexterity relate and support the typology in a parsimonious manner. This contemporary angle is of particular relevance given that the typology provides a fulcrum for examining a variety of strategic and operational orientations (Miles & Snow, 2003).

Due to the vintage of the original work by Miles and Snow (1978), many scholars and managers believe that the ideas expressed by them are for an earlier, some may even suggest, simpler time. This study demonstrates that not only does the typology continue to be relevant, but when viewed through the lens of ambidextrous dynamic capabilities, brings clarity to the understanding of the dynamics of contemporary strategic

management. The Miles and Snow typology addresses many of the fundamental strategic and organizational trade-offs today's organizations must make in order to attain some level of competitive advantage. The elegance of the typology lies in the simplicity of its characterizations, such that its explanatory power transcends the academic world and is equally comprehensible to the practitioner. As a result, it may well assist the practitioner in understanding the interaction of the variables necessary to achieve the more elusive sustainable competitive advantage.

Two of the strategic archetypes, Prospector and Defender, have been examined extensively in the literature (e.g., Hambrick, 1983; McDaniel & Kolari, 1987; Meyer, 1982; Miles et al., 1978; Snow & Hrebiniak, 1980), principally because they are the most recognizable and thus the easiest to explain and understand. The remaining two types, Analyzer and Reactor, have received far less attention. The apparent lack of focus on the Analyzer archetype is perhaps attributable to its complexity (Hambrick, 2003). This lack of focus is further likely accredited to not applying a focal lens that can clarify the attributes of this archetype. The Reactor's seemingly erratic behavior presents an entirely different challenge, that being the equivalent of trying to capture smoke in a bottle. How does one explain something that is difficult to grasp and has no consistent form?

Utilizing the lens of ambidexterity, this study brings focal clarity to the understanding of the Miles and Snow archetypes. It is argued that utilizing the ambidexterity lens, within the context of dynamic capabilities, provides a continuum for both classifying and understanding the attributes of these archetypes. The Prospector, Defender and even Reactor are archetypes that are understood. The strategic orientation and attributes of both the Prospector and Defender are easily identifiable and remain

consistent over time, and the Reactor is identifiable by virtue of its apparent lack of consistency or clearly recognizable orientation (Miles & Snow, 1978).

While this study examines the four archetypes, it is increasing the understanding of the Analyzer archetype that may prove the most enlightening. The Analyzer appears as an enigma. The Analyzer's dual focus presents a conundrum whereby at times it may appear as a Prospector and at others as a Defender. The Analyzer archetype, because of its apparent conflict of attentions, makes it difficult to neatly identify and understand. However, when the lens of ambidexterity is applied, a much clearer and cohesive picture emerges. In fact, it is argued that the Analyzer is a proxy for the ambidextrous organization.

While each of the Miles and Snow (1978) archetypes has a place in its respective environment, the Analyzer, because of its more adaptive orientation, may well be a model for sustainable advantage in the increasingly evolving competitive climate. The Analyzer is an archetype that more organizations increasingly approximate, or intend to approximate (Hambrick, 2003). By increasing the understanding and assimilation of the characteristics of the Analyzer, an organization may well improve its basis for achieving a competitive advantage and access to increased rents in the market. In summary, this research contributes to the existing literature in the following ways:

- First, it takes a contemporary look at the work of Miles and Snow (1978). It presents the view that even 35 years after the work was first presented, the typology is still a relevant and useful model for understanding an organization's strategic orientation.

- Second, by applying the lenses of dynamic capabilities and ambidexterity, this study extends the original work by Miles and Snow (1978).
- Third, this study demonstrates that while the original work by Miles and Snow (1978) presents the four strategic archetypes as static and mutually exclusive immutable states; when viewed through the lens of dynamic capabilities, they are better viewed as various phases along a changing dynamic. That is, as an organization reconfigures and deploys its resources in response to changes in its environment; it will reposition itself among the strategic archetypes. When the focal lens of ambidexterity is added, it becomes apparent that an organization can, and often does coexist simultaneously in more than one strategic archetype.
- Finally, the study develops a clearer understanding of how the three problem domains (entrepreneurial, engineering and administrative) identified by Miles and Snow (1978) align and interact in influencing and positioning an organization's strategic archetype.

CHAPTER 2: LITERATURE REVIEW

Strategic Typologies

Ideally, a typology of organizational strategic deployment should account for heterogeneity among organizations with respect to their individual capabilities, effectiveness of their exploration and exploitation, and their resulting performance. Several environmental factors such as intensified international competition, sluggish economic growth, technological advancements and deregulation provide an impetus for strategic management (Day & Wensley, 1988; Jain, 1985). Typologies in strategic management are common and widely utilized to describe feasible business strategies in industry. Some examples of typologies in the realm of strategic management relate to; strategic context (Mintzberg, 1978), views on strategy (Hamel & Prahalad, 1994), strategic decision making types (Ansoff, 1965), or strategic behavior patterns (Miles and Snow, 1978).

Muhammad and Ehsan (2011) suggest that the most influential typologies are probably those of Abell (1980), Miller (1992), Porter (1980a), Tearcy and Wiersema (1995) and Miles and Snow (1978). Shortly after Miles and Snow published their strategy typology, Porter (1980b) presented his set of “generic strategies” and Abell

(1980) followed with his “strategic windows”. Miller (1992) later presented his view in the form of “high performance gestalt”, with strategy consultants Treacy and Wiersema (1995) positing “market leadership” soon after. Table 2 presents the prevalent strategic typologies.

Table 2: Prevalent Strategic Typologies

Authors	Categories or Types
Miles and Snow (1978)	<ul style="list-style-type: none"> •Prospectors •Analyzers •Defenders •Reactors
Porter (1980a) – Generic Strategies	<ul style="list-style-type: none"> •Cost Leadership •Differentiation •Focus
Abell (1980) – Strategic Windows	<ul style="list-style-type: none"> •New Primary Demand •New Competing Technology •Market Redefinition •Channel Changes
Miller (1992) – High Performance Gestalt	<ul style="list-style-type: none"> •Craftsman •Builder •Pioneer •Salesman
Treacy and Wiersema (1995) – Market Leadership	<ul style="list-style-type: none"> •Operational Excellence •Product Leadership •Customer Intimacy

The principal difference among these influential typologies lie in that Miles and Snow, and subsequently Miller’s work take more of a ‘strategic choice’ approach focusing on both the analysis of an organization’s internal strengths and weaknesses, along with its external environment. The internal aspects of this approach are extended by Barney (1986b; 1991) into the Resource Based View (RBV). The work of Porter, Abell, and to a lesser degree, Treacy and Wiersema are more rooted in an external view, with a focus on analyses of opportunities and threats. This industrial organizational

economist's view examines the environment and seeks ways for allocating organizational resources through estimates of market demand, levels of output, and product price (Miles & Snow, 1978).

Miles and Snow do not view the environment as a homogeneous entity, but rather as a complex combination of factors, including product and labor market conditions, industry customs, government regulation, as well as raw material and financial resource availability. It is each of these factors and their unique influence on the organization that helps define the strategic type the organization will adopt. Miles and Snow posit that an organization's structure and approach is only partially pre-ordained by environmental conditions and that top management choices are the critical drivers of organizational structure and process. Furthermore, while the potential available choices are many and complex, they fall into three broad areas of concern; the engineering, the entrepreneurial, and the administrative problems (Miles & Snow, 1978).

To summarize, the key premise in the extant industrial organizational economic literature is that strategy should favorably align the organization with its environment (Andrews & David, 1971; Hofer, 1975; Porter, 1980a), as such, strategy is an adaptive mechanism, which conflicts with Miles and Snow's (1978) view that strategy is relatively immutable. They posit that strategy constrains the organization in its response to the environment. Furthermore, over time, the organization develops reoccurring and tested guidelines or methods for responding to, or more importantly, ignoring environmental shifts (Hambrick, 1983).

Mintzberg and Waters (1985) posit that strategies follow along a continuum from deliberate at one extreme to emergent at the other. The authors further contend that

defining strategies as deliberate precludes any significant amount of organizational learning relative to its strategy. In Hambrick's (1983) view, Miles and Snow present their archetype strategic types as being a deliberate set of actions in response to the organization's view of its environment. The Miles and Snow typology positions Defenders as more deliberate in their orientation and thus inclined towards a planned strategy. At the other end of the continuum is the Prospector with a tendency towards a more emergent strategy. I posit that in this paradigm, the Analyzer resides somewhere between the two extremes. Mintzberg and Waters (1985 p. 296) suggest "it may even be possible that highly deliberate strategy making processes will be found to drive organizations away from prospecting activities and towards cost leadership strategies whereas emergent ones may encourage the opposite posture".

The Miles and Snow (1978) typology is one of the most popular, in regards to strategic capabilities, in the literature. Their typology has been extensively applied in both the management and marketing strategy literature since its inception. Among the studies are the work of Hambrick (1983), Conant et al. (1990), Walker et al. (2003) and even after a quarter of a century the typology is considered a landmark conceptual model (Hambrick, 2003).

Hambrick (1983 p. 6) suggests that the "key dimension underlying the [Miles and Snow] typology is the rate at which an organization changes its products or markets". Hambrick (1983 p. 6) continues by identifying: "Defenders are organizations that engage in little or no new product/market development." "Prospectors attempt to pioneer product/market development." "Analyzers are an intermediate type." Finally, Hambrick

(1983 p. 7) addresses the Reactor as “Organizations that attempt ad hoc opportunistic deviations from their strategies, or never develop a strategy....”

Miles and Snow’s presentation of their typology suggests that organizations develop internal consistencies in the pursuit of their strategy and that by extension, perpetuate behaviors associated with the strategy. The result being that as the environment in which the organization operates changes; the organization has a tested and well developed set of responses for dealing with the change. However, the reciprocal behavior, in the form of strategic inertia, may also result. This is exhibited by the organizations difficulty in accepting the need for, or implementing strategic change (Hambrick, 1983).

Expanding upon this view, Zahra and Pearce (1990 p. 751) present that "successful organizations develop a systematic, identifiable approach to environmental adaptation". The approach an organization takes relative to the competitive environment addresses three types of problems identified by Miles and Snow: the entrepreneurial problem deals with determining an organization’s market-product domain; the engineering problem addressing an organization’s systems and capabilities; and the administrative problem focusing on organizational processes and strategic issues.

Entrepreneurial Problem. The strategic archetypes posited by Miles and Snow differentiate themselves in how they address the entrepreneurial problem; defined as the strategic management of the organization’s approach to the product-market domain(s) they serve (Hambrick, 1983). Defenders seek to create and maintain stability in their domain by aggressively protecting their product-markets. While Miles and Snow present the Defender type as a single archetype, Slater, et al. (2010), leveraging Porter’s (1980a)

focus on differentiation and low cost as a means towards competitive advantage, presents two, related but different aspects, for the Defender; the Low Cost Defender and the Differentiated Defender. The Low Cost Defender approaches their product-market domain with a feature/benefit mix that adequately addresses the domain's needs. As a result of focusing on achieving the lowest possible costs relative to production and distribution, this subtype differentiates itself by offering a lower, if not the lowest, overall price in markets viewed as mature and stable (Slater et al., 2010). An organization exemplifying this approach is VIZIO, who in 2007 became the market share leader with low manufacturing costs, low price, good quality, low advertising, and an intense focus on its distribution strategy (Ogg & Kanellos, 2010; Slater et al., 2010). The Differentiated Defender also operates in well established, mature domains. However, they differentiate themselves from the Low Cost Defender by offering a superior product or service (or one that is perceived of as superior on some dimension) at a premium price. Slater et al. (2010 p. 471) offer Intuit as an example of the Differentiated Defender. Intuit is "best identified and respected for its Quicken, Quick Books, and TurboTax line of products".

The Prospector resides at the other extreme in its more proactive and aggressive approach to its environment. Prospector type organizations seek not only to identify, but to exploit new opportunities through both product and market development. A classic example of a Prospector organization is 3M. Slater et al. (2010 p. 470) stated, "in 1916, 3M invented Wetordry... Other successful 3M discoveries include; masking tape, Scotch cellophane tape, the Thermo-Fax copying process, Scotchgard Fabric Protector, Post-it Notes and a variety of pharmaceutical products." As an organization, 3M is committed to

continuous innovation and new product development, serving customers through six business segments (3M).

Analyzers appear to occupy a more central position by carefully exploring new product and market opportunities, while simultaneously maintaining their core skills, products and customers (Slater & Narver, 1993). Analyzers often quickly follow Prospectors into new domains with incrementally improved products or services, or with low prices. Slater et al. (2010 p. 475) suggest that Analyzers “target the early adopter and early majority segments with a creative strategy that enables the Analyzer to both steal early adopter customers from Prospectors and attract members of the early majority”. Microsoft may be viewed as one of the most successful examples of the Analyzer archetype. As Slater et al. (2010 p. 475) presents, “Microsoft has a very broad product line, with many of its best known products (e.g., DOS, Word, Excel, PowerPoint, Internet Explorer, X-Box) entering the market as second – or, even later – movers”. The steady stream of revenue generated by these, and other similar products, has served as the catalyst in funding other company developments. Slater et al. (2010 p. 475) “Microsoft expends considerable effort identifying emerging product-market opportunities that have been established by traditional market innovators [Prospectors] – such as Apple, Sony, and Nintendo – and then pursuing sales in the mainstream market.”

Engineering Problem. Subsequent to addressing the entrepreneurial problem, the organization must then create a system for producing and distributing the products and services within the identified domain. This is what Miles and Snow identify as the engineering problem. This engineering problem involves the creation of systems and processes that operationalize the organization’s approach to the entrepreneurial problem.

The operationalizing of these systems and processes often requires the selection of appropriate technologies facilitating the input-transformation-output process for the production and distribution of the chosen products and services. Additionally, the organization may need to establish new, or at a minimum modify existing, information, communication, and control channels to ensure the proper utilization of the technology (Miles & Snow, 2003).

Administrative Problem. Overarching successful implementation of both the entrepreneurial and engineering problems is what Miles and Snow (1978) identify as the administrative problem. In the view of many management theories, the administrative problem is primarily focused on the reduction of uncertainty within the organization. Miles and Snow (2003) conceptualized the administrative problem as rationalizing and stabilizing those activities which successfully solved the problems facing organizations during the entrepreneurial and engineering phases. In their view, solving the administrative problem involves more than just rationalizing existing systems, what they posit as uncertainty reduction; it also entails formulating and implementing processes enabling the organization to continue to evolve, or innovate. This is often exhibited by an organization's ability to revamp many of their internal planning, coordination and control related activities such as to facilitate the organization's ability to pursue new or emerging areas of business. Additionally, these activities may encompass the addition of new personnel, new functions, and the like to the existing organization. As a result, it is the development and implementation of these organizational structures and processes that ultimately support the organization's entrepreneurial and engineering problems (Slater & Narver, 1993).

Miles and Snow (2003) assert that the ideal organization's management should be equally adept at performing two somewhat conflicting functions. First, the organization's management should be able to create an administrative system, structure and set of processes that would smoothly direct and monitor the organization's current activities. They would do so in a manner that would prevent the system from becoming so ingrained such as to jeopardize future innovative activities.

The most complicated of the Miles and Snow's strategic types to study as an academic and implement as a manager is the Analyzer. The challenge for managers is how to adopt an Analyzer's orientation without inadvertently falling in to the Reactor's archetype. The implantation of the Analyzer archetype requires careful and delicate balancing of often conflicting demands, from both internal and external stakeholders. Hambrick (2003) suggests that it is relatively easy and straight forward to explore the two extreme models; Prospector and Defender. These types present a clear representation of what their focus is and what they are striving to be. These organizations face decisions that are relatively easy to adopt, while those that do not fit with the strategic typology are easy to reject. Granted, there is the risk that an organization pursuing one of these two orientations will become an exaggeration; a hyper-defender or a hyper-prospector, and as a result fail because of its exaggerated profile (Miller, 1992). Barring that occurrence, organizations in each of those two domains can enjoy clarity, consistency, and nothing to "balance".

Hambrick (2003) argues that it is the Analyzer organizations that are walking a tightrope, trying to innovate while trying to remain efficient and reliable. It is easy to view these organizations as vacillating and unsure. They don't have the same clarity of

focus as Defenders and Prospectors. Should they have subunits that look and behave like Defenders, while other aspects of the organization look like Prospectors? Should they engage in temporary activities to make them appear as Prospectors and then swing back to the Defender direction, then back to the Prospector direction, and so on? Or is it better for the organization to try to proceed down the middle, adopting moderate and hybrid approaches to everything the organization does? Miles and Snow (1978) provide a template of what an Analyzer should look like, but stop short of expounding upon the administrative intricacies required within the duality of these organizations. Vast majorities of organizations approximate, or intend to approximate, the Analyzer strategic type. There are many managers in these organizations waiting for insights into how to successfully approach their organizations (Hambrick, 2003). In this regard, examination of the solution(s) to the administrative problem provides insight as to how management can best address their organization.

Resource-Based View (RBV)

Foundational to any discussion of dynamic capabilities is the work of Barney (1986c; 1991) and Wernerfelt (1984; 1995) and the concepts of the resource-based view (RBV). Key to any discussion of RBV is the VRIN framework. As expressed by Barney (1991), in order for an organization to achieve any form of a sustained competitive advantage, the resources of the organization must be valuable (V), rare (R), inimitable (I), and non-substitutable (N). Specifically, for a resource to be a sustained source of competitive advantage,

“it [resources] must be valuable, in the sense that (a) it exploits opportunities and/or neutralizes threats in a firm’s environment, (b) it must be rare among a firm’s current and potential competition, (c) it must be

imperfectly imitable, and (d) there cannot be strategically equivalent substitutes for this resource that are valuable but neither rare or imperfectly imitable” (p. 105).

In RBV, competitive advantage is examined from the perspective of the “distinct competencies” that provide an organization with an advantage over its competitors (Barney, 1986a; 1986c; Day & Wensley, 1988; Hitt et al., 2001; Reed & DeFillippi, 1990). Lado et al. (1992) suggest that the work of these, and other authors; Dierickx & Cool (1989) and Wernerfelt (1984) to name a few, present the organization as a web of resources deployed with the aim of capturing a unique market position. These works present the concept of sustained competitive advantage and extend it to the context of resource-based competencies. As a result, this concept of a sustained competitive advantage is built upon the foundation that organization specific competencies provide the basis of rent-yielding strategic assets (Barney, 1986a; 1989; Dierickx & Cool, 1989).

RBV differs from the neoclassical economics of Chamberlin (1950) and Friedman (1953) or the industrial organizational view popularized by Porter (1980a; 1980b; 1985) which views strategy as being a function of environmental determinism and views strategy as being a series of strategic selections and actions focused on organizational survival and renewal (Lado et al., 1992). This concept of strategic selection provides a framework for recognizing that idiosyncratic competencies and capabilities are consciously created and developed by organizations. Contrary to the industrial organizational view ascribing competitive advantage to the dictates of the market / industry, RBV places emphasis on distinctive competencies as the source of sustainable competitive advantage. The RBV defines capabilities as bundles of skills and knowledge that allow an organization to make the best use of their assets and to effectively coordinate their activities (Day, 1990). Furthermore, RBV posits that such

competencies are proactively created and sustained through the pattern of strategic decisions and actions taken by the organization (Lado et al., 1992). Capabilities refer to an organization's capacity to deploy resources, usually in combination, and encapsulate both those explicit processes and tacit elements, such as know-how and leadership, embedded in the processes. As such, capabilities are most likely organizational specific and develop over time through complex interactions between and among the organization's resources (Amit & Schoemaker, 1993).

Wang and Ahmed (2007) present organizational resources and capabilities in a 'hierarchical' order, with a focus on an organization's competitive advantage. They posit that resources are the foundation of an organization and thus the basis for organizational capabilities. They designate resources as the 'zero-order' element of their hierarchy. While resources can be a source of temporary competitive advantage, in dynamic market environments they tend not to persist over time and thus, cannot be a source of a sustainable competitive advantage. Capabilities are 'first-order' and are likely to result in improved performance, when organizations demonstrate the ability to deploy those resources in the attainment of a desired goal. Core, or distinct, capabilities are 'second-order' and are the result of a bundle of an organization's resources and capabilities that are strategically important to maintaining its competitive advantage at a specific point in time. This leads to the 'third-order' dynamic capabilities. These capabilities emphasize an organization's constant pursuit of the renewal, reconfiguration and re-creation of resources, capabilities and core capabilities addressing a changing environment.

Danneels (2002; 2008) take a slightly different view from Wang et al. (2007) and refer to the capacity of an organization to create new resources and competencies as its

‘second order competences’. These second order competencies, are similar to first order (Danneels, 2002) or ‘ordinary’ (Winter, 2003) competences in that they are heterogeneously distributed among organizations and thus may serve as the basis of superior performance. In a dynamic world, only organizations that continually build new strategic assets faster and less expensively than their competition will earn superior rents (Danneels, 2012). Danneels (2012) further posits that organizations achieving these second order competencies are able to create new resources such that it allows them to imitate and substitute resources of competing organizations. In effect, achieving what Schumpeter identified as creative destruction. This Schumpeterian competition provides for competing organizations to continually maneuver to outdo and undermine each other (D’Aveni, 1994; Schumpeter, 1942).

Dynamic Capabilities

The most basic and enduring question in the field of strategic management is how do organizations achieve and sustain the often elusive competitive advantage. Dynamic capability is the evolutionary extension of the resource-based view (RBV) of the firm (Barney 1986b; 1991; 1994; Wernerfelt, 1984). Dynamic capabilities research attempts to analyze the sources of wealth creation by organizations. The concept seeks to explain success and failure at the organizational level. The publication of Teece et al.’s (1997) article “Dynamic Capabilities and Strategic Management” foreshadowed a growing flow of research into the concept of dynamic capabilities. An extensive review of the literature by Barreto (2010) found in excess of 1,500 articles referencing dynamic capabilities in the period from 1997 to 2007. He further found that the number of articles considering dynamic capabilities as a key element of the focal study has been growing.

From the period 1997 to 2007, Barreto found 40 articles published in leading management journals, including the Academy of Management Journal, Academy of Management Review, Administrative Science Quarterly, Journal of Management, Journal of Management Studies, Management Science, Organizational Science, and Strategic Management Journal.

The extant research provides a wide assortment of distinct conceptualizations of dynamic capabilities. Table 3 lists some of the more popular definitions of dynamic capabilities.

Table 3: Dynamic Capability Definitions

Scholars	Working definition
Teece & Pisano (1994)	The collection of capabilities and competencies allowing the organization to create new products and processes thus responding to changing market circumstances.
Teece, Pisano & Shuen (1997)	The organizations ability to combine, build and reconfigure internal and external competencies in response to changing environments.
Eisenhardt & Martin (2000)	The organizations processes to integrate, reconfigure, gain and release resources to match and or create market change. The organizational and strategic routines utilized to achieve new resource configurations in response to markets emerging, colliding, splitting, evolving and dying.
Teece (2000)	The ability to quickly sense and seize opportunities.
Zollo & Winter (2002)	A learned and stable pattern of collective activities by which the organization generates and alters its operating routines to improve effectiveness.
Winter (2003)	Capabilities that extend, modify or create ordinary capabilities.
Zahra, Sapienza & Davidsson (2006)	The ability to reconfigure resources and routines in keeping with the vision and

	appropriateness of the principle decision maker.
Helfat et al. (2007)	The capability of an organization to purposefully create, extend, or modify its resource base.
Teece (2007)	The capacity to: (a) sense and shape opportunities and threats, (b) to seize opportunities, and (c) maintain competitiveness by enhancing, combining, protecting and reconfiguring the organizations assets, both tangible and intangible.
Wang and Ahmed (2007)	Define dynamic capabilities as a firm's behavioral orientation to constantly integrate, reconfigure, renew and recreate its resources and capabilities. They posit that upgrading and reconstructing the organization's core capabilities in response to the changing environment is primary to attaining and sustaining a competitive advantage.

Source: Barreto (2010)

As previously discussed, the RBV recommends that the organization deploy its resources and capabilities strategically, allowing them to exploit their distinctive competencies in a manner that best creates a sustainable competitive advantage. RBV's central tenet positions superior performance as a result of the utilization the organization's resources (Barney, 1991; Peteraf, 1993). Danneels (2012) suggests that rents accruing from a particular resource pool are transitory, and as a result, organizations need to excel at continuously creating new resources and configuring them into competencies (Dierickx & Cool, 1989).

Dynamic capabilities are the antecedent organizational and strategic routines around which organizations reconfigure their resource base; acquire and shed resources, integrate them together, and recombine them to generate potential new value creating

strategies (Grant, 1996b; Pisano, 1994). They become the drivers in the creation, evolution, and recombination of other resources towards the creation of competitive advantage (Henderson & Cockburn, 1994; Teece et al., 1997). Eisenhardt and Martin (2000) go on to define dynamic capabilities as:

“The firm’s processes that use resources – specifically the processes to integrate, reconfigure, gain and release resources – to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die” (p. 1107).

Wang and Ahmed (2007) posit that dynamic capabilities are not merely processes, but are embedded in processes; processes that are often explicit or codifiable structuring and combinations of resources, and as such, can easily be transferred within and across the organization.

A sustainable competitive advantage does not evolve from a static stock of competencies, rather such an advantage is the result of the continuous accumulation of competencies (Reed & DeFillippi, 1990). Organizations that best develop and manage their respective resources and capabilities over time will outperform their competition (Hitt & Ireland, 1985). These organizational specific capabilities are deeply rooted in the routines and practices of the organization and as a result are usually difficult for competitors to imitate and therefor serve as a main source of long term competitive advantage (Dierickx & Cool, 1989). Ultimately, it is up to management to exploit these capabilities to the organization’s greatest advantage. As emphasized by Collins (1994), dynamic capabilities govern the rate of change of capabilities.

When the competitive environment is shifting, the dynamic capabilities by which organizations’ integrate, build, and reconfigure internal and external competencies to

address rapidly changing environments (Teece et al., 1997) becomes the source of the organization's sustained competitive advantage. In contrast to Teece et al. (1997), Eisenhardt and Martin (2000) assert that the functionalities associated with dynamic capabilities are not idiomatic. Organizations can, and often do, end up with capabilities similar in their attributes. There are multiple paths towards achieving the same end capabilities (i.e., the principle of equifinality). "Dynamic capabilities are necessary, but not sufficient conditions for sustaining a competitive advantage" (Eisenhardt & Martin, 2000 p. 1106). They posit that dynamic capabilities can be used to enhance existing resource configurations in the pursuit of a long term competitive advantage. However, they are frequently utilized to establish new resource configurations in the pursuit of a temporary advantage. To this end, dynamic capabilities facilitates the strategic challenge of maintaining a competitive advantage when the duration of that advantage is unpredictable, where time is an essential aspect, and the dynamic capabilities that drive the competitive advantage are unstable processes that are, unto themselves, difficult to sustain (Eisenhardt & Martin, 2000).

The dynamic capabilities approach stresses that competitive advantage requires an organization to simultaneously exploit and explore their organizational specific competencies and capabilities to address changing environments. This is of particular relevance in a Schumpeterian environment of innovation-based competition, price/performance rivalry, increasing returns, and the 'creative destruction' of existing competencies (Teece et al., 1997). Elements of the approach are, in fact, found in Schumpeter (1942), Penrose (1959), Prahalad and Hamel (1990), and Teece (1986a; 1986b; 1987; 1997). Additionally, Grant (1996a); Pisano (1994); Teece et al. (1997);

Henderson and Cockburn (1994); Eisenhardt and Martin (2000); Wang and Ahmed (2007); Amit and Schoemaker (1993); Winter (2003) and Danneels (2002; 2008; 2012) also identify, to varying degrees, three main component factors of dynamic capabilities, specifically; adaptive capability, absorptive capability and innovative capability.

Adaptive Capability. Adaptive capability is defined as an organization's ability to identify and capitalize on emerging market opportunities (Chakravarthy, 1982; Miles & Snow, 1978). Chakravarthy (1982) distinguishes adaptive capability from adaptation. The latter [adaptation] describes an optimal end state of survival for an organization, while adaptive capability focuses more on the effective search and balancing of explorative and exploitive strategies (Staber & Sydow, 2002). This balancing act between exploration and exploitation is brought to a strategic level and is linked to the resource based perspective. An organization's adaptive capability is manifested as a strategic flexibility; the inherent flexibility of the organizational resources and its flexibility in applying them (Sanchez, 1995). The development of adaptive capability is often accompanied by the evolution of organizational forms (Wang & Ahmed, 2007). Firms that have high levels of adaptive capability exhibit dynamic capabilities (Teece et al., 1997).

Absorptive Capability. Absorptive capability is referred to by Cohen and Levinthal (1990) as the ability of the organization to recognize the value of new, external information, assimilate it, and apply it to commercial ends. This ability to evaluate and utilize knowledge, both inside and outside of the organization, is principally a function of the level of prior knowledge. Organizations with a higher absorptive capability usually demonstrate a stronger ability for learning from partners, integrating external information

and ultimately transforming it into organizationally-embedded knowledge. Empirical studies (George, 2005; Salvato, 2003; Verona & Ravasi, 2003) reveal that an organization's ability to acquire external, new knowledge, assimilate it with existing, internal knowledge and create new knowledge is an important facet of dynamic capabilities. The more an organization demonstrates its absorptive capability, the more it exhibits dynamic capabilities. For example, George (2005) examined the effects of experiential learning of the cost of capability development by examining data on patenting and licensing activities at the Wisconsin Alumni Research Foundation. This study provided evidence of a curvilinear relationship between experiential learning within a capability and the costs of developing the same capability. The work of Salvato (2003) develops the concept of a core micro-strategy, defined as an established system of interconnected routines, micro-activities and resources that can be identified throughout most of an organization's strategic initiatives. Verona and Ravasi (2003) examined the impressive capability of Oticon A/S, a leading company in the hearing-aid industry, to develop new products. Their finding showed linkages between knowledge based processes and a coherent mix of organizational resources.

Innovative Capability. Innovation capability is defined by Crossan and Apaydin (2010) as:

“production or adoption, assimilation and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome” (p. 1155).

Schumpeter (1934) viewed innovation as being reflected in novel outputs; a new good or a new quality of a good; a new method of production; a new market; a new source of

supply; or a new organizational structure. Innovation can be summarized as doing things differently.

The Crossan and Apaydin (2010) definition captures the more salient aspects of innovation. It includes internally conceived, as well as externally adopted innovation, e.g., production or adoption and it recognizes innovation as a creative process by including application in the form of exploitation. Further, this definition acknowledges innovation's intended benefits, e.g., value-added, at many levels of analysis. Ultimately, the definition allows for the possibility that innovation may be relative as opposed to an absolute novelty. Finally, it draws attention to the two roles of innovation, a process and an outcome.

Wang and Ahmed (2007) posit that adaptive capability, absorptive capability and innovative capability are the most important component factors of dynamic capabilities. They suggest that these three components are integral to an organization's ability to integrate, reconfigure, renew and recreate its resources and capabilities in keeping with external environmental changes. They further suggest that the focus of an organization's adaptive capability is to align its internal organizational factors with external environmental factors. Absorptive capability emphasizes the importance of taking external knowledge and combining it with internal organizational knowledge and ultimately absorbing it for internal use. Innovative capability exhibits the linkage between an organization's inherent ability to respond to the dynamics of their market by innovating new products or services in response to changes in the market. Innovative capabilities tacitly explain and demonstrate the connections between the organization's capabilities and resources with its product market.

The ability of an organization to accomplish and integrate these three capabilities, adaptive, absorptive and innovativeness gets to the heart of the question; how do organizations survive in the face of increasingly rapid change? This fundamental question has been the subject of examination in a wide spectrum of disciplines, including; management, marketing, history, organizational sociology, psychology and economics. Underlying this area of research is the question: Can organizations adapt and change, and if so, how does this occur? The extant research presents two major schools of thought: those that argue for adaptation, e.g., punctuated equilibrium, dynamic capabilities; and those that argue that organizations are inert and change occurs through a more evolutionary like process of variation, selection, and retention.

Ambidexterity

Dynamic capabilities, and their role in providing organizations with a long term competitive advantage, offer a way to explain organizational adaptation. Increases in competitive rivalry and more rapid and unpredictable shifts in environmental conditions suggest that organizations need to simultaneously explore and exploit (March, 1991; Sutton, 2002) as well as operate both flexibly and efficiently (Brown & Eisenhardt, 1997; Tushman & O'Reilly, 1997; Volberda, 1996)

Central to the notion of an organization's ability to adapt is how the organization exploits existing assets and market positions to produce profits, while simultaneously exploring new technologies and markets. Duncan (1976) and Tushman and O'Reilly (2008; 1997) identify ambidexterity as exemplifying the degree to which the organization configures and reconfigures its resources and capabilities allowing for the capture of both existing and new opportunities.

Ambidexterity is about engaging in both exploitation and exploration.

Exploitation, at one end of the continuum, is about efficiencies; refining existing knowledge, increasing productivity, control, certainty, and variance reduction.

Exploration, at the other end of the continuum, is about search; discovery, autonomy, new knowledge recreation, innovation and variance acceptance (O'Reilly & Tushman, 2008; Raisch, Birkinshaw, Probst, & Tushman, 2009)

As expressed by March (1991), these two ends of the continuum provide a fundamental tension confronting an organization's long term survival. "The basic problem confronting an organization is to engage in sufficient exploitation to ensure its current viability and, at the same time, devote enough energy to exploration to ensure its future viability" (p. 105). The end objective is in configuring and reconfiguring organizational resources to capture existing as well as new rent producing opportunities (Helfat & Raubitschek, 2000; Holmqvist, 2004; March, 1991; Teece, 2007). In essence, these paradoxical capabilities serve as the basis of ambidexterity (Duncan, 1976; Tushman & O'Reilly, 1996).

Danneels (2002) contends that successful organizations need not only have the capability to generate new knowledge aimed at creating new products and services for emerging markets, but also need the ability to leverage current and existing competencies in the exploitation of existing products and services in current markets. Jansen, Tempelaar, van den Bosch & Volberda (2009) support the view that the processes and routines required for an organization to be ambidextrous are a dynamic capability. That ambidextrous organizations are more facile at mobilizing, coordinating, and integrating what are often contradictory efforts, and allocating, reallocating, combining and

recombining organizational resources and assets across exploratory and exploitive activities (Teece, 2007; Tushman & O'Reilly, 2007).

In some of the research, ambidexterity appears as a bi-polar condition. In this view, ambidexterity is manifested by a sequential pattern of relatively long periods of exploitation interspersed with short bursts of exploration, what Burgelman (2002), Duncan (1976) and Gupta, et al. (2006) identify as punctuated equilibrium. This approach creates a paradoxical situation because the short term efficiencies and control focus associated with exploitative activities is often at odds with the longer term experimental focus and decentralization associated with exploratory activities (Floyd & Lane, 2000).

Abernathy (1978) highlights the inconsistencies between exploitative activities focused on productivity improvements and cost reductions, and those explorative activities focused on innovation and flexibility. Although both orientations are important for organizational survival, exploration and exploitation are contradictory organizational processes (Adler et al. 1999; Benner & Tushman, 2003; March, 1991; Teece et al. 1997). Hedberg, Bystrom and Starbuck (1976) suggest that organizations engage in multiple forms of learning (exploration and exploitation) by alternating between different organizational designs and by being both consistent and inconsistent in their actions (Benner & Tushman, 2003). In Duncan's view, ambidexterity occurs sequentially as organizations switch structures to accommodate evolving innovation.

The works of Eisenhardt and Brown (1998), Lovas and Ghoshal (1998), and Venkatraman et al. (2007) support a temporal sequencing view of organizational adaptation. In their longitudinal study of software firms, Venkatraman et al. (2007)

found that sequential ambidexterity was the main effect impacting sales growth providing support for ambidexterity as a dynamic.

The tension between exploitation and exploration results in competition for scarce organizational resources and attention. Thus, sustaining an optimal mix between the two is challenging, and often results in tradeoffs (Simsek, Heavey, Veiga, & Souder, 2009). Levinthal and March (1993) suggest that by combining exploration with exploitation, organizations can overcome the structural inertia resulting from an excessive focus on exploitation, while simultaneously refraining from an overabundance of exploration without gaining benefits.

Tushman and O'Reilly (2008; 1997) posited an alternative view by arguing that given the complexity and pace of change faced by many organizations and the time needed to develop new products and services, ambidexterity may require that exploitation and exploration be pursued simultaneously. They further suggested that separate subunits, business models, along with distinct alignments were required for each capability. The result of a series of detailed case studies of fifteen business units, comprising thirty-six episodes of innovation, O'Reilly and Tushman (2004) determined that organizations that pursued ambidexterity utilizing independent units were more successful. Their study supports the notion that ambidextrous organizational design facilitates simultaneous exploration and exploitation.

March (1991) clearly is supportive of a multidimensional approach, with an emphasis on the necessity for pursuing both exploitative and explorative types of activities. He does argue that there is always tension between exploitation and exploration whenever an organization must decide on how to allocate resources. The

tension between exploitation and exploration is difficult and is most often biased toward exploitation. March (1991) further posits that an over emphasis and focus on exploitation to the exclusion of exploration sets the condition for a competency, or success trap, which in turn often leads to organizational inertia and ultimately obsolescence. March endorses the necessary duality of pursuing both approaches as an attempt to achieve an optimal mix (Simsek et al., 2009). This tendency results as a manifestation of the positive feedback the organization receives from its existing customers and the resulting profits from those customers (Benner & Tushman, 2003; Gupta et al., 2006). March (2003 p. 14) argues that because of this short term orientation “established organizations will always specialize in exploitation, in becoming more efficient in using what they already know. Such organizations will become dominant in the short run, but will gradually become obsolescent and fail.”

In contrast, too much emphasis and focus on exploration, to the detriment of exploitation, often leads to a different failure trap, one in which the organization receives insufficient return for its acquired knowledge. March (1991 p. 71) expressed this as organizations that engage excessively in exploration “exhibit too many underdeveloped new ideas and too little distinctive competencies.” As such, returns associated with exploration are more uncertain, more distant in time, and often even a threat to existing organizational units. These organizations are often less facile at exploration and face greater exposure to technological and market changes (Siggelkow, 2001).

In this conceptualization of ambidexterity, not only are separate structural subunits for exploitation and exploration often needed, but different competencies, systems, incentives, process and cultures, each internally aligned, may also be needed

(O'Reilly & Tushman, 2008). Exploitative subunits focus on efficiency while exploratory subunits focus on experimentation and improvisation. Tushman et al. (2003) argue that ambidextrous organizations do not switch between exploration and exploitation, rather they do both simultaneously. That such organizations, also do not rely upon spinout, internal venture groups, or venture capital to generate new or innovative options, rather they develop such options internally.

An ambidextrous organization is one that is capable of both balancing and exploiting existing competencies while simultaneously exploring new opportunities. A core tenet of ambidexterity is an organization's ability to manage the contradictions and multiple tensions associated with dealing with today and tomorrow, efficiency and effectiveness, alignment and adaptation, and optimization and innovation (Venkatraman et al., 2007). Some of the more recent research has begun to examine exploration and exploitation as independent orientations, orthogonal to each other, such that an organization can opt to engage in high levels of both orientations at the same time (Gupta et al., 2006). In this view, ambidexterity is the capacity of an organization to pursue high levels of exploration and exploitation concurrently as purported by Beckman (2006), Jansen et al. (2006), Lavie and Rosenkopf (2006) and Lubatkin et al. (2006), and managing trade-offs to find the most appropriate balance between the two.

“Ambidextrous organizations simultaneously operate in multiple time frames as they exploit and explore at the same time” (Tushman et al., 2003 p. 10). Jansen (2009) further suggests that an organization's ability to concurrently pursue these dynamic capabilities is the most effective means for achieving organizational ambidexterity.

Cao et al. (2009) expand and reconfigure the organizational ambidexterity concept by unpacking the previous views into two dimensions. They designated them as the balanced dimension of ambidexterity and the combined dimension of ambidexterity. The balanced dimension reflects an organization's orientation to maintain a close relative balance between exploratory and exploitive activities, while the combined dimension examines the combined magnitude of the two activities. They reason that the dimensions are conceptually distinct and rely on different causal mechanisms effecting organizational performance. By explicitly distinguishing between these dimensions of ambidexterity, Cao et al. (2009) provide a greater degree of precision to the conceptualization and operationalization of the construct. They posit that whereas the balanced dimension reduces damaging effects of over engagement in exploitation to the detriment of exploration and vice versa, the combined dimension enhances organizational performance through the generation of a greater pool of complementary resources that may be leveraged across both orientations (Tushman, 1997).

The position can be taken that the conceptualization of organizational ambidexterity is itself ambidextrous. On one hand, it is argued that exploration and exploitation are bi-polar in their implementation, what Duncan (1976) and later Burgelman (2002) refer to as punctuated equilibrium. On the other hand is the position postulated by Tushman et al. (2003), and further supported by Gupta et al. (2006), Venkatraman (2007) and Cao et al. (2009) that exploration and exploitation can, and do, exist simultaneously at high (or low) levels within an organization.

Boumgarden et al. (2012) attempts to span the gulf between the punctuated equilibrium position presented by Duncan (1976) and Burgelman (2002) and the view

that exploration and exploitation can exist simultaneously as posited by Tushman et al. (2003), Gupta et al. (2006), Venkatraman (2007) and Cao et al. (2009), with an alternative proposition that they refer to as “organizational vacillation” (p. 588). In Boumgarden et al’s. (2012) discussion, organizational vacillation is when an organization temporally and sequentially alternates its structure and resulting focus between high levels of exploration and exploitation. Organizational vacillation entails the organization modulating between an orientation focused exploration and an orientation focused on exploitation.

The difference between Boumgarden et al’s. (2012) conceptualization of organizational vacillation and Burgelman’s (2002) position on punctuated equilibrium may well lie in the means of transition between the explorative and exploitative orientations. The punctuated equilibrium view has the transition between the two orientations as discrete and static in nature, while organizational oscillation views the transition as being dynamic and fluid. In the organizational vacillation view, the positioning on either exploration or exploitation is temporal, and that as the organization expands and diminishes its energies in one direction it gathers and expands momentum in the other (Boumgarden et al., 2012). This research recognizes the coexistence or orthogonal operationalization of ambidexterity while accepting the dynamic transitions between the axes presented in organizational vacillation.

Organizational change is most often driven by innovation as “all adaption, whether evolutionary or revolutionary requires innovation” (Gupta, Tesluk, & Taylor, 2007 pg. 885). Long term performance requires an organization has the ability to evolve

and adapt through innovation, while simultaneously continuing to perform in the near term (Brown & Eisenhardt, 1997; Smith & Tushman, 2005; Tushman & O'Reilly, 1996).

Organizational Structure

Strategically, achieving long term viability requires an organization excel not only in the operational competencies to compete in their existing markets, but also have the ability to recombine and reconfigure their assets and organizational structure to adapt to emerging markets and technologies. Duncan (1976), building on the work of Burns and Stalker (1961) and Thompson (1967), first used the term “organizational ambidexterity” and argued that in order to be successful in the long term, organizations needed to consider a dual structure.

Organizations accomplish their various operations via organizational structures defining the distribution of power, resources and responsibilities across the myriad of functions and units comprising the organization. Alternative structures facilitate exploration and exploitation. Exploration entails problem solving and new knowledge acquisition approaches in manners that make routine information processing and centralized decision making inefficient. Exploitation, in contrast, is based more on incremental improvements in processes and products. It is often better accomplished through more traditional and formal organizational routines (Lavie et al., 2010). In addition to the tensions associated with allocating resources to support either exploration or exploitation, this duality also entails conflicting organizational routines that offset each other (Lavie et al., 2009).

Tushman et al. (2003) define an ambidextrous organization as a business unit(s) with a high degree of structural differentiation, relatively low levels of structural

integration, and a high level of senior team integration. In essence, the design provides for contradictory architectures reflecting the contrasting requirements of exploration and exploitation. Extending the discussion regarding organizational formation, the incremental approach provides that organizations are not subject to inertial focus and can therefore evolve through paced, continuous, incremental change (Brown & Eisenhardt, 1997). The punctuated equilibrium school argues that organizational evolution occurs through periods of incremental change punctuated by discontinuous change or upheaval (Romanelli & Tushman, 1994).

Tushman et al. (2003) posit that in organizations emphasizing an ambidextrous design, where differentiated units both explore and exploit, such a design may facilitate building dynamic capabilities through both incremental and proactive punctuated change. It may well be that such ambidextrous structures create an environment supporting both multiple selection and change modes. As such, exploitation is supported by an environment of incremental, continuous change tied to a specific organizational trajectory. Exploration, in contrast, is an extension of an organizational learning mode based upon experiences from which the senior team engages in strategic bets on the organizations future (Tushman et al., 2003).

Birkinshaw and Gibson (2004) divide the concept of organizational ambidexterity into two separate, but related, constructs. The first and more standardly recognized is structural ambidexterity whereby the organization creates separate structures for different types of activities. The argument for this approach is that because the activities associated with exploration and exploitation are so different they cannot effectively coexist. However, the weakness in this approach is that separation can also result in

isolation. As a result, new ideas can be overlooked or left unaccepted because of the apparent lack of linkage back to the core business.

Birkinshaw and Gibson (2004) address this phenomenon in the development and exploration with the second construct - contextual ambidexterity. At the individual level, contextual ambidexterity allows the individual employee, during the course of their day-to-day work, to opt between alignment-orientated and adaptation-orientated activities. When operationalized at the organizational level, contextual ambidexterity becomes the collective orientation of the organization's employees toward the simultaneous pursuit of alignment and adaptability. This view is in keeping with the Brown and Eisenhardt (1997) view of continuous change.

A significant amount of the extant literature on ambidexterity focuses on the structural separation between alignment and adaptability orientated activities. Birkinshaw and Gibson posit (2004 p. 55) "Contextual ambidexterity isn't an alternative to structural ambidexterity but rather a complement". They argue that structural separation is a means for providing new initiatives the space and resources they may need to establish traction. To this end, structural separation should be temporary and that contextual ambidexterity can enhance both the initial separation and later reintegration processes within the organization.

Lavie et al. (2010) support the argument that contextual ambidexterity addresses the tension between exploration and exploitation by suggesting that these activities can be maintained simultaneously. Organizational separation provides for spatial buffering thus allowing exploration and exploitation to occur simultaneously but within separate and distinct organizational units. Domain separation differs from organizational separation in

that it allows for simultaneous exploration and exploitation within the same unit but with exploration in one domain and exploitation in another.

Temporal separation suggests that exploration and exploitation coexist in the same organization but at different times. This is more in keeping with the punctuated equilibrium view expressed by Romanelli and Tushman (1994). Organizations switch between exploration and exploitation depending upon a variety of organizational and environmental factors and needs.

Innovation

Conflict and paradox abound in most organizations, Thompson (1967 p. 150) suggests that “the paradox of administration [involves] the dual searches for certainty and flexibility”. Firms are under constant pressure to address these dualities of being big and small, efficient and effective, to operate in multiple time frames, and to be Prospectors and Defenders (Gavetti & Levinthal, 2000; Miles & Snow, 1978). It may be argued that sustained organizational performance is a function of organizing for both short term and long term innovation. The degree of change [innovation] within an organization can be incremental or radical. Innovation that slightly impacts an organization or market is deemed as incremental, while radical innovation is “major in scope and breadth, involving strategic innovations or creation of new products, services or markets” (Koberg, Detienne, & Heppard, 2003 p. 24).

He and Wong (2004) expound upon innovation by distinguishing between technological innovation and organizational innovation. They present organizational innovation as involving changes to organizational structures and administrative processes. Technological innovation entails commercializing technological knowledge

into new products or processes. While technological innovation was the primary focus of He and Wong's (2004) study, an outcome of their findings was to garner support for pursuing an ambidextrous organizational design. They found that managing the tension between exploration and exploitation was best accomplished on a continuous basis. Their findings are in keeping with synthesizing capabilities in the adaption of an ambidextrous design as posited by Tushman and O'Reilly (1996) and what Brown and Eisenhardt (1997) present as a semi-structure design allowing an organization to compete on the "edge of chaos".

Taylor and Greve (2006) espouse the concept of variance into the dialogue. They argue that any new product that is an incremental extension of an existing product should result in a positive financial return, what they identify as a high mean performance, but it should not provide for any inordinate profit or loss. On the other hand, products that represent a dramatic departure from past or extant products provide for a potential extreme in profits and losses, what they refer to as high variance in performance, but will most likely have a lower expected mean due to their higher probability of failure (Taylor & Greve, 2006). March (1991) referred to this phenomenon of organizational exploration as introducing experiments of uncertain value into the organization's activities versus exploitation which maintains and reaffirms the organization's current activities.

Smith and Tushman (2005) reaffirm March's (1991) assertion that innovation at the expense of existing products and services results in suboptimal outcomes due to the organization's failure to capture benefits associated with historical efficiencies. These existing products and services generate the slack resources, knowledge and process routines that facilitate the launch of new products and services. Similarly, Leonard-

Barton (1992) and Gibson and Birkinshaw (2004) suggest that innovation generates new knowledge, along with access to new markets and customer awareness, leading to enhancing existing products and services.

Tushman and Smith (2002) define innovation streams as the portfolio of products simultaneously managed by an organization or strategic business unit. These products are defined in terms relative to the technology and markets of the organization's existing products (Abernathy & Clark, 1985). Innovation within the organization can be incremental (Christensen, 1997; Dosi, 1982), architectural in nature (Henderson & Clark (1990), or discontinuous Gatignon et al. (2002). Additionally, Abernathy and Clark (1985) suggest innovation can encompass existing customers or new customers in defined markets, or as emerging markets (Christensen, 1997). Smith and Tushman (2005) conclude that an organization's innovation stream is comprised of continuing incremental innovation in the organization's extant products or services, along with at least one nonincremental innovation.

Much of the extant research on "innovation" is primarily linked to the research and development (R&D) activities associated with the creation of new products (Armbruster, Bikfalvi, Kinkel, & Lay, 2008). The Schumpeterian (1934) definition of innovation extends beyond the single focus of technical or product innovation. Schumpeter delineates between five distinct types of innovation: new products, new production methods, new markets, new sources of supply, and new forms of organization. Other scholars (e.g., Anderson & King, 1993; Damanpour & Evan, 1984; Totterdell, Leach, Birdi, Clegg, & Wall, 2002) consider innovation as a complex phenomenon with a technical element, e.g., new products or production methods, and a non-technical

element, e.g., new markets and new forms of organization. Additionally, innovation comprises product innovations, e.g., new products or services, and process innovation, e.g., new production methods or forms of organization. Armbruster et al. (2008 p. 644) separate innovation into four distinct types: “(1) technical product innovation, (2) non-technical service innovation, (3) technical process innovation, and (4) non-technical process innovation, understood to be organizational innovations”.

Benner and Tushman (2003) classify innovation into two dimensions: (1) proximity to the organizations current technological trajectory and (2) its proximity to the organization’s existing customer and market segment. Various innovation types on the technological dimension present contrasting determinants and organizational effects (Morone, 1993; Tushman & Smith, 2002). At one end is incremental innovation, characterized by small changes, building upon the organization’s extant technological capabilities. Radical innovation, as posited by Dosi (1982) and Green et al. (1995) presents fundamental changes to the organization’s technological trajectory and by extension its organizational competencies. Christensen and Bower (1996) suggest classifying innovation by whether it addresses the needs of existing customers and markets or is targeted towards new or emergent customers and markets. Innovations falling into this category are usually disruptive to existing organizational structures and require significant departures from the organization’s existing activities.

Ambidextrous organizational forms are built upon internally inconsistent architectures so that the organization can both explore and exploit (Adler et al., 1999) Achievement of this form involves highly differentiated units as well as management integration within the organization (Gibson & Birkinshaw, 2002; He & Wong, 2004;

Tushman & O'Reilly, 1997). Top management serves as the focal point for the contrasting agendas of exploration and exploitation. The top management team needs to develop techniques allowing them to consistently be inconsistent, thus negotiating a balance between the need to be small and large, centralized and decentralized, and focused on both the short term and long term simultaneously (Benner & Tushman, 2003; Gavetti & Levinthal, 2000; Hedberg et al., 1976).

Innovation streams within the boundaries of the ambidextrous organization reconcile the paradoxical demands of exploration and exploitation. They accomplish this by establishing internally inconsistent architectures within a single organization. These contrasting architectures provide the benefits of experimentation and variability while simultaneously providing for exploitation and process control. In order to drive streams of innovation, these apparently inconsistent units must be strategically integrated (Benner & Tushman, 2003).

CHAPTER 3: HYPOTHESES DEVELOPMENT

The Miles and Snow (1978) typology has served as one of the fundamental building blocks in the study of what has evolved into the domain of strategic management. Prior to their work, there were two competing views dominating the field of business level strategy. On one side were the pundits who proposed the design and implementation of a business level strategy as being situational, that strategy was a reactionary response to external variables and to a large degree, inconsistent and non-generalizable. On the other side were those who posited a “universal” view of strategy, where market share, superior product quality, and the like, was always a good thing (Hambrick, 2003).

Another, albeit unintended, outcome of the Miles and Snow typology is its multilevel view of the organization. Much of the literature on organizational strategy focuses on either a macro (the linkages between the organization and the environment) or a micro (the behavioral dynamics of the implementation process) view of the organization. The Miles and Snow typology spans the two foci by examining facets of both in a more holistic manner, in essence providing cross-level position. This seminal work stimulated an entire stream of research examining the underlying orientations

organizations assume in their strategic formulation and implementation. As detailed earlier, Miles and Snow (1978) identify three, interlinked decision domains that define an organization's strategic orientation and focus. The *entrepreneurial* domain, with its focus on product-market selection falls within the macro view. The *administrative* domain, with its focus on the structures and relationships within the organization lands in the confines of the micro view. Finally, the *engineering* domain, focusing on the processes required to address the entrepreneurial domain problem, straddle the space between the macro and micro views.

An examination of the Miles and Snow (1978) typology utilizing the broad basis of the RBV and dynamic capabilities with a specific focus on ambidexterity leads to the development of a number of testable hypotheses. The three domains identified in the typology present a variety of organizational capabilities, that depending upon how an organization deploys them; meet the RBV requirements for being valuable, rare, inimitable and non-substitutable (Barney, 1991).

The dynamic capabilities view emphasizes the need for an organization to continually realign and reconfigure its resources to maintain a competitive advantage in a mutable environment. Ambidexterity provides for organizational designs supporting the exploration of available ideas for the generation of major innovations, while simultaneously refining existing products and processes. Consistent with prior research (Benner & Tushman, 2002; March, 1991; Taylor & Greve, 2006), this process tends to facilitate the increase in mean performance as opposed to dispersion of performance.

Entrepreneurial Problem

Within the Miles and Snow typology, the entrepreneurial problem focuses on the extent the organization exploits existing products or markets and explores new opportunities for products or markets. The problem manifests itself as an attempt by management to isolate a portion of the total market in order to create a stable product or service offering that is clearly directed at a specific market segment (Miles & Snow, 1978). This need to balance exploration and exploitation is central to Tushman and O'Reilly's (1996) conceptualization of an ambidextrous organization. The basis of the ambidextrous posture is that organizations capable of operating simultaneously to explore and exploit are more likely to achieve superior performance over organizations emphasizing one of the orientations at the expense of the other. Exploitation of existing capabilities is often needed to explore new capabilities, and exploration of new capabilities enhances an organization's existing knowledge base. Organizations differentiate themselves not only to the degree they explore new things, but also to the degree they master old or existing capabilities (Katila & Ahuja, 2002).

The dynamic capabilities paradigm posits that in order for an organization to achieve a sustainable competitive advantage it must develop new capabilities (explore) and perfect existing capabilities (exploit). It is possible for an organization to achieve a potentially less sustainable advantage by focusing closer to one dimension or the other. The ambidextrous organization strives for a higher level of balance between the exploratory and exploitive dimensions, or a closer match in the relative magnitude of exploratory and exploitive activities resulting in a more structured control of performance risk (Cao et al., 2009). Conversely, an imbalance between the two dimensions poses

threats through an increase in performance risks (Levinthal & March, 1993; March, 1991). Specifically, when an organization's magnitude of exploitation well exceeds its exploration, the organization is likely to be subject to the risk of obsolescence. These organizations may enjoy short term success from exploiting existing products or markets, but may be unsustainable in the face of significant market or technological change (Tushman & Anderson, 1986). In this regard, existing competencies can quickly become outdated and by extension lead to powerful path dependencies (Christensen & Overdorf, 2000) or core rigidities (Leonard-Barton, 1992).

Utilizing these lenses, the Defender archetype has a narrow and focused concentration on the exploitation dimension. Defenders are most likely to direct their products or services specifically to a limited segment of the potential market. The specified market is often one perceived as the healthiest and most viable. The Defender looks to continue to serve satisfied customers and thus stabilize relations within the market segment such as to maintain a continuous flow and acceptance of their products and services (Miles & Snow, 1978).

Defenders often stake the organization's success on their ability to aggressively maintain their market position within their chosen market segment. Defender organizations tend to ignore product or service developments outside their selected domain. Attention is focused on the continuous and intensive efforts to remain the most exploitive of their established products or services. As a result, product development, if it occurs, is usually accomplished as an extension [exploitation] of current products or services in closely related areas (Miles & Snow, 1978). In summary, the Defender's entrepreneurial problem entails the creation of a narrow, stable domain through a limited

combination of products and markets; an emphasis on protecting their domain from competitors; a tendency to ignore external developments; and minimal [new] product development. This leads to the following hypothesis:

Hypothesis 1a: Organizations with a high exploitative and a low explorative orientation will exhibit a Defender strategic type.

Conversely, when an organization's primary focus is finding [exploring] new products and markets, they are characterized as the Prospector archetype (Miles & Snow, 1978). For the Prospector organization, maintaining a reputation for innovation in product and market development may be as important, and potentially even more important, than the achievement of abnormal rents. In fact, because of the Prospector's emphasis on exploring new products and markets, and the inevitable increase in failure rates associated with such exploration, Prospectors often find it more difficult to consistently achieve the profit levels associated with the more efficient Defenders (Miles & Snow, 1978).

In comparison to the Defender, whose product offering and domain are narrow and stable, the Prospector's domain is typically broad and in a continuous state of evolution. The Prospector is often in a mode of near perpetual exploration. This continual addition of new products or markets, often accompanied by retrenchment in other domains, gives the Prospector's products and markets the appearance of fluidity (Miles & Snow, 1978).

In order to thrive, and even survive, Prospectors need to develop and maintain the ability to continuously monitor a wide variety of environmental conditions, trends and events. Because these scanning [exploration] activities need to extend beyond the organization's existing domain, Prospectors are often the creators of change in their respective industries (Miles & Snow, 1978). This leads to the following hypothesis:

Hypothesis 1b: Organizations with a high explorative and a low exploitative orientation will exhibit a Prospector strategic type.

Building on this logic, the failure of an organization to achieve a balance between exploration and exploitation can result in the organization being susceptible to either the risk of obsolescence or the risk of failure to appropriate. On the other hand, striking a closer balance between the two orientations enables an organization to avoid, or at least better manage such risks (Cao et al., 2009). Miles and Snow (1978) posit that the aforementioned Defenders and Prospectors reside at opposing ends of the same continuum. To reconcile this, they identify the Analyzer, as a unique combination of the Defender and Prospector archetypes. In their parlance, the Analyzer is an organizational type focusing on the minimization of risk while simultaneously maximizing returns (Miles & Snow, 1978).

Brown and Eisenhardt (1997) support the view that exploration and exploitation are mutually exclusive states. In their view, organizations may use sequential attention or rhythmic pacing to shift between exploration and exploitation. In their longitudinal study

of Intel, Burgelman and Grove (2007) reported findings supporting Brown and Eisenhardt's (1997) contention.

This study concurs with Gupta et al's. (2006) view that exploration and exploitation may take place in complementary domains, (e.g., technologies and markets that do not necessarily compete for the same resources). This view is central to the combined dimension conceptualization posited by Cao et al. (2009) that exploration and exploitation are not in fundamental competition. These exploratory and exploitive processes can be supportive of one another and may, in fact, help leverage the effects of one to the other. Utilizing the lenses of dynamic capabilities, focusing on ambidexterity, explorative and exploitive activities can be aggressively and simultaneously pursued. That is, these two conditions are not bi-polar, but rather orthogonal states.

A high degree of exploitative effort can improve an organization's effectiveness in exploring new knowledge, as well as developing resources in support of new products, services and markets. Cao et al. (2009) posit that because of the repeated use of existing knowledge and resources, the organization is more aware as to where in the organization this knowledge and resources reside, coupled with a deeper understanding of their functionality. As a result, the organization is more capable of initiating various reconfigurations of existing knowledge and resources already under its control (Fleming, 2001; Kogut & Zander, 1992).

The Analyzer's approach to the entrepreneurial problem is to locate and develop [explore] new product and market opportunities while simultaneously maintaining [exploiting] a stable core of products and customers. As such, Miles and Snow (1978) posit that the Analyzer's domain is a mixture of products and markets, with some in a

stable environment and others in a changing one. Similarly, proficiency in an organization's exploratory processes can enhance its ability to participate in successful exploitation. In this regard, being successful in exploring in one new product or technological domain can enhance exploitive efforts in a complementary domain. Additionally, successful exploration can improve the economies of an organization's existing exploitive activities. This can occur because as the organization internalizes more outside knowledge and resources through exploration, its exploration takes place within a larger sphere of competencies, so that increasingly efficient routines and processes can be utilized on a larger scale (Cao et al., 2009).

In summary, Cao et al. (2009) propose that because organizational knowledge and resources can often be effectively leveraged across both types of orientations, explorative and exploitative processes can complement each other and lead to enhanced organizational performance. Murray and O'Mahoney (2007) further posit that there is a middle ground, a cumulative approach. The cumulative approach is usually represented as innovation generated by one organization and added to or adapted by another for either external market consumption or internal use. Miles and Snow (2003) identified such organizations, often labeled as 'second movers', as residing between the extremes they identify as Defenders (H1a) and Prospectors (H1b). This third organizational orientation combines the salient behaviors of the other two by minimizing risk while maximizing the opportunity for increased profits. The challenge for these organizations is in locating and exploiting new product and market opportunities while simultaneously maintaining a stable and sustainable core of products and customers. These organizations seem poised and ready to move rapidly towards any new product or market that has recently received

some degree of acceptance. In essence, these organizations are avid followers of change. Much of these organizations' growth is derived through market penetration, because the organizations' basic orientation focuses on its traditional product – market base.

Of the three archetypes identified by Miles and Snow, the Analyzer presents the best representation of ambidextrous dynamic capabilities. Keeping with Gupta et al's (2006) approach, it is argued that the Analyzer's orientation exemplifies the synchronous pursuit of both exploration and exploitation. Research in this arena suggests that if successful in this domain, a substantial amount of growth may also result from product or market development. This set of conditions leads to the following hypothesis:

Hypothesis 1c: Organizations with a high combined explorative / exploitative orientation will exhibit the Analyzer strategic type.

Each of the three previous strategic archetypes; Prospector, Analyzer, and Defender, regardless of their respective orientation, exhibit one common characteristic, that of being consistent in the pursuit of their orientation. The fourth archetype, the Reactor, is consistent only in its inconsistent and unstable reactions and adjustments to their environment. These organizations have an inability to marshal consistent response mechanisms when faced with changes in the environment. Potential sources for these organizations' apparent inconsistencies, include; (1) management's inability to articulate a viable organizational strategy; (2) a strategy may be articulated, but the requisite technologies [the engineering problem], structures and processes [the administrative problem] are not appropriately linked, or (3) management blindly adheres to a particular

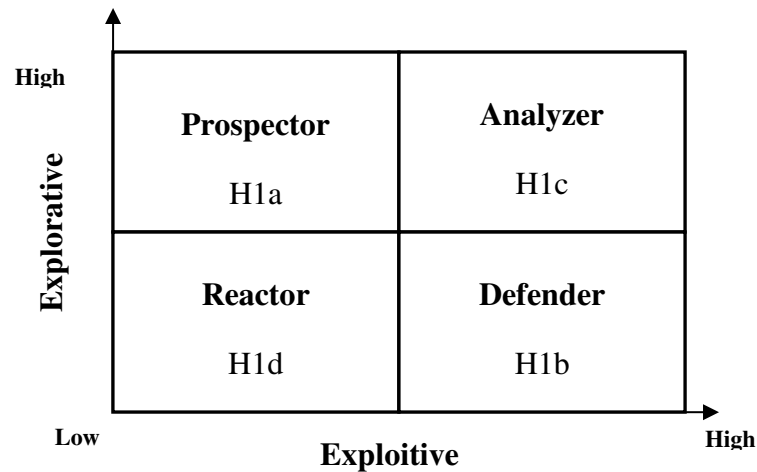
strategy rendered impotent by changes in the external environment (Miles et al., 1978). The Reactor's ultimate failing is its inability to consistently pursue an explorative focus [the Prospector], an exploitive focus [the Defender], or some systematically crafted blend of the two [the Analyzer].

The Reactor frequently falls into the unpleasant cycle of responding inappropriately to environmental change and uncertainty. The Reactor's subsequent performance is typically poor, and as a result, these organizations become increasingly reluctant to act aggressively in the future (Conant et al., 1990). The Reactor's response to the entrepreneurial problem tends to be uneven, transient, with opportunistic thrusts, and coping postures that exhibit a proclivity towards issue-dominated reactions in a sporadic manner. The result of this behavior is hasty and often thoughtless change. In keeping with the view posited by Hughes and Morgan (2008), the Reactor archetype exhibits no clear strategic rudder, and as a result, responds to external competitive events when forced, and most likely in an inconsistent and unstable manner. In fact, when compared to the other archetypes, the Reactor is best categorized by a low propensity for both explorative and exploitive behavior. This set of conditions leads to the following hypothesis:

Hypothesis 1d : Organizations with low explorative, low exploitive, and a low or inconsistent blend of the two orientations will exhibit the Reactor strategic type.

Figure 2 visually depicts hypotheses H1a through H1d.

Figure 2: Entrepreneurial Problem



Engineering Problem

Before proceeding onto the engineering problem, it should be noted that there is a fine, if not, subtle difference between the entrepreneurial and engineering problems defined by Miles and Snow (1978). Examination of the two reveals that the entrepreneurial problem is primarily focused on the actual product(s) or service(s) brought to the market by the organization. The engineering problem is focused on the actual processes, and the degree of innovation, employed by the organization in delivering those products or services. In essences, the entrepreneurial problem examines the “what”, whereas the engineering problem is orientated towards the “how”. Stated another way, the engineering problems is the means to the entrepreneurial problem’s ends.

The engineering problem involves the creation of systems that operationalize management’s approach to the problems found in the entrepreneurial domain (Miles & Snow, 1978). This entails the technologies and processes employed by the organization

to produce and deliver its products and services to the market. In essence, this is the organization's ability to innovate in response to changing environments. Schumpeter (1934) identified five different types of innovation: new products, new production methods, new markets, new sources of supply, and new forms of organization. It is the new production methods and new sources of supply that most closely fit within the engineering problem identified by Miles and Snow. New products and new markets fit within the domain of the entrepreneurial problem addressed in the previous section whereas new organizational forms, addressed in the next section, fits the administrative problem.

Innovation has long been considered a complex phenomenon that includes both technical and non-technical aspects as well as products and processes (Anderson & King, 1993; Damanpour & Evan, 1984; Trotterdell et al., 2002). In recognition of this complexity, Armbruster et al. (2008) separate innovation into four types: (1) technical product innovation, (2) non-technical services, (3) technical process innovation, and (4) non-technical process innovation, often identified as organizational innovation.

Innovation entails the processes of proposing, adopting, developing, and implementing a new idea as it relates to a product, process, policy, program or service (McAdam & Galloway, 2005). In keeping with Damanpour and Evan (1984) and further supported by Armbruster et al. (2008), innovation manifests itself as new managerial and working concepts and practices within the organization. It is the strategic capabilities of innovation, coupled with organizational learning, that allow organizations to create wealth and develop a competitive advantage.

Engineering innovation can be delineated into structural and procedural components. Structural innovation affects the responsibilities, accountabilities, chain of command, information flows, and hierarchical and divisional structures of the organization's functional activities. Procedural innovation impacts the processes, routines and overall operations of the organization and results in the change or implementation of new processes within the organization. Procedural innovation can influence the speed, flexibility and adaptability of production and quality (Armbruster et al., 2008).

This view of engineering-related innovation is further expanded upon by Crossan and Apaydin (2010) as:

“production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome” (p. 1155).

These various views present the duality of innovation in that it can be both internally conceived and externally adopted. This duality view of innovation is supported by presenting the concept as extending beyond a purely creative process (exploration) by including the dimension of application (exploitation). Adopting this view allows for measuring innovation, regardless of specific focus, orthogonally. This approach recognizes that an organization's innovation activities will occur somewhere on the intersection between radical and incremental. In keeping with this view, organizations exhibiting innovation activities predominately along any one of the orthogonal dimensions leads to the following two hypotheses:

H2a: Organizations pursuing radical innovation will exhibit the Prospector strategic type.

H2b: Organizations pursuing incremental innovation activities will exhibit the Defender strategic type.

Ambidextrous organizations pursuing both radical and incremental innovation are faced with a challenging, if not daunting task (Jansen et al., 2005). To successfully pursue this strategy, those organizations must develop combinations of organizational characteristics and competencies that act in a complementary and reinforcing manner (Sheremata, 2000). The issue surrounding this strategy is the apparent tension between the ability to both explore and exploit based upon the belief that experimentation with new alternatives negatively impacts improvements in existing procedures and processes. The alternative, but equally espoused position is that improvements in existing activities diminish the attractiveness of experimenting with new ones (Levitt & March, 1988; Taylor & Greve, 2006).

While some organizations may emphasize one approach over the other (e.g., exploration over exploitation), the notion of ambidexterity suggests that organizations that do not attempt to achieve a dual goal of radical and incremental innovation activities may suffer long term issues in performance (Vorhies, Orr, & Bush, 2011). This view supports the contention that organizations need to maintain a balance between exploration and exploitation, or need to be able to adapt quickly from one orientation to the other. This leads to the following hypothesis:

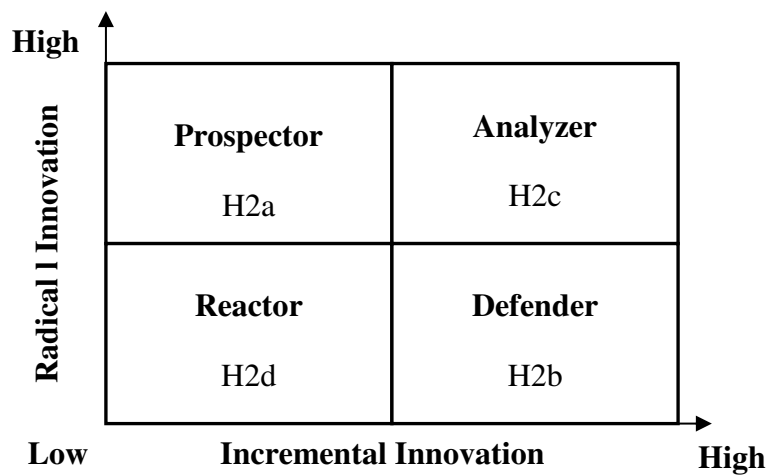
H2c: Organizations that simultaneously pursue radical innovation and incremental innovation will exhibit the Analyzer strategic type.

The final hypothesis in this section deals with those organizations that exhibit no consistent or specific orientation towards either explorative or exploitive innovation, but rather appear to suffer from an apparent lack of focus. As a result of this condition, these organizations tend to underperform. Organizations meeting this characterization are what Miles and Snow (1978) would classify as Reactors. As such, the hypothesis is:

H2d: Organizations that are erratic, even irrational, in the pursuit of either radical or incremental innovation will exhibit the Reactor strategic type.

Figure 3 visually depicts the hypotheses H2a through H2d:

Figure 3: Engineering Problem



Administrative Problem

The administrative problem is concerned with the organization's ability to establish management and planning systems in support of the entrepreneurial and engineering problems. The problem focuses around two principle loci; first is the reduction of uncertainty, second is the formulation and implementation of processes enabling the organization to evolve, in essence pursuing a path of ambidextrous dynamic capabilities. The reduction of uncertainty is addressed by establishing rational and stable activities focused on directly facilitating the achievement of the entrepreneurial and engineering problems.

The organizational structure, in terms of processes and procedures, addresses how the organization will go about accomplishing its goals and objectives. The premise purported by Miles and Snow (1984, p. 10) is "successful organizations achieve strategic fit with their market and [thereby] support their strategies with appropriately designed [organizational] structures and management processes." In order to achieve these goals, an organization must develop compatibility and consistency among their strategies. Additionally, they must be consistent in their implementation of the strategies at the various levels of the organization. Expanding upon this view of integration, Henderson and Venkatraman (1993) argued that alignment throughout the organization is critical to maximizing economic performance. Gibson and Birkinshaw (2002) break this concept of integration and alignment into two elements, contextual and structural.

The achievement of a level of contextual integration supporting superior economic performance requires the coordination or alignment of three structures within the organization. These three generic structural foci are identified by Schumpeter (1934)

as a form of [organizational] innovation. The foci are later expanded upon by Jansen et al. (2005) as; (1) formalization, the extent to which the organization's rules, procedures, instructions and communications are codified or written down, (2) routinization, the degree to which organizational tasks are invariable, repetitious and seldom affected by unexpected or novel events, and (3) connectedness, the extent that individuals in the organization are networked to each other and within the organizational hierarchy.

Formalization and routinization both focus on the reduction of variance within the organization. A strong orientation on these two forms of alignment often result in the organization codifying best practices, thus making them easier to exploit, as well as to apply and reapply. As a result, they facilitate the diffusion of organizational knowledge. Organizational formalization and routinization enhances exploitive innovation by encouraging the improvement of current products, services and processes. A resulting consequence is that organizations with highly developed formalization and routinization may be less effective in the explorative innovation front.

Connectedness deals with the network, both internal and external, that the organization has for the acquisition and dissemination of newly acquired knowledge and insights. Organizations supporting significant or densely connected networks allow individuals within the organization to develop high levels of knowledge while simultaneously refining existing products and services. Densely connected organizations support both exploratory and exploitive innovation "by... enabling organic features while their efficiency and control requirements are supported by collaborative, shared control afforded by enabling bureaucratic features" (Adler & Borys, 1996 p. 79). Organizations that simultaneously pursue exploratory and exploitive innovation need to develop

organizational combinations that act in a complementary and reinforcing manner (Sheremata, 2000).

The greater the level of connectedness the organization has, particularly with external sources of knowledge and information, the greater the likelihood that the organization will have an explorative view of their environment and market(s). The reciprocal orientation, exploitive, is more likely to be the result of a more inward looking view. Gibson and Birkinshaw (2004) suggest that ambidextrous organizational structures support engagement in both explorative and exploitive orientated activities. The ambidextrous organization is characterized as supporting the interaction between formalization, routinization and connectedness. These organizations manage to combine these often contradictory mechanisms and simultaneously increase both explorative and exploitive innovative activities.

The structural component of the administrative problem involves the actual reporting relationships within the organization and how decision making authority is dispersed within the organization. This component identifies how centric or dispersed the actual decision making authority resides in the organization. As the degree of centralization diminishes, the degree of coordination needs to correspondingly increase. The result is a difference between alignment and adaptation. In order to optimize decision making capability, the organization needs to ensure the appropriate balance between these two facets.

Gibson and Birkinshaw (2004) conceptualize adaptability as the organization's ability to reconfigure its activities, to be explorative, in response to the rapidly changing demands in the environment. Alignment measures the cohesiveness among all the

activities of the organization, how the activities are exploited, in the achievement of the organization's common goals.

Keeping with this conceptualization, this orientation is most often accomplished by exploring the development of new products, services or markets. This leads to the following hypothesis:

H3a: Organizations that are high in adaptive orientation will exhibit the Prospector strategic type.

Alignment is the organizations propensity for cohesiveness, to exploit existing competencies, products, services and markets in the achievement of its goals. This leads to the following hypothesis:

H3b: Organizations that are high in alignment orientation will exhibit the Defenders strategic type.

A balanced response, between adaptiveness and alignment, reflects an organization's ambidextrous orientation towards its products and services as well as the current and potential markets it serves. This leads to the following hypothesis:

H3c: Organizations exhibiting both high adaptive and alignment (ambidextrous) orientations will exhibit the Analyzer strategic type.

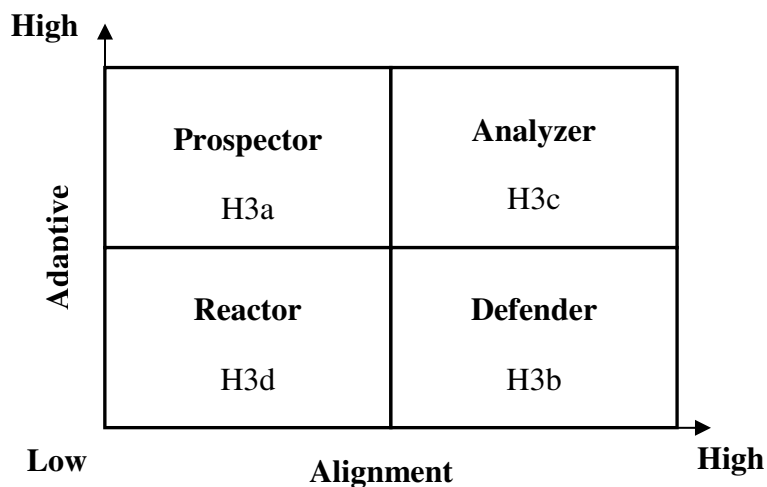
Organizations that exhibit no consistent or specific orientation towards either adaptiveness or alignment appear to suffer from an apparent lack of management focus.

This leads to the following hypothesis:

H3d: Organizations exhibiting inconsistent adaptive and alignment orientations will exhibit the Reactor strategic type.

Figure 4 visually depicts the hypotheses H3a through H3d:

Figure 4: Administrative Problem



Strategic Archetype and Ambidexterity

Heretofore, the discussion has centered on the three specific domains of the entrepreneurial, engineering and administrative problems. What is missing is a composite or aggregate measure that facilitates the classification of an organization into a specific

archetype, be it Prospector, Analyzer, Defender, or Reactor. Much of the extant literature utilizes the lens of a specific function, with the preponderance in the realm of marketing, as a proxy for assigning an organization to a specific archetype. For example, Ruekert and Walkers (1987) examined the interaction between marketing and research and development (R&D) personnel, and found that conflict exists between marketing and R&D personnel in an organization when business units are pursuing different strategies. McKee, Varadarajan and Pride (1989) examined market volatility and found that the relationship between strategic archetype and marketing tactics appears to hold in different market environments. Conant et al., (1990) examined marketing competencies and found that 'new service development' most differentiated the four strategic archetypes. Lastly, Slater and Narver (1993) utilized the product-market strategy as the determinant of superior profitability for the Prospector, Analyzer and Defender archetypes.

In the current study it is argued that an organization's strategic archetype is manifested as the aggregation of its specific domain orientations. Stated otherwise, an organization that exhibits strong, consistent and complementary tendencies in each problem domain will align with a specific strategic archetype. Specifically:

1. Organizations exhibiting high explorative traits, high radical innovation and high adaptability will be identified as Prospectors
2. Organizations exhibiting high exploitative traits, high incremental innovation and high alignment will be identified as Defenders
3. Organizations exhibiting high explorative and exploitative traits, high levels of both radical and incremental innovation, and high levels of adaptability and alignment will be identified as Analyzers

4. Organizations exhibiting low explorative and exploitative traits, low levels of both radical and incremental innovation, and low levels of adaptability and alignment (i.e., inconsistency among the three problem domains) will be identified as Reactors

This leads to the following hypothesis:

H4a: The more consistent the individual problem domain orientation of the organization (entrepreneurial, engineering, and administrative), such that each plots on the same relative quadrant, the more likely they are to represent the organization's singular strategic archetype (Prospector, Analyzer, Defender or Reactor).

Those organizations that maintain the greatest degree of alignment between the three domains and a specific archetype will outperform their competition. Dynamic capabilities suggest that such organizations exhibit a superior capability to migrate and reconfigure their resource base towards the on-going creation and maintenance of a competitive advantage. This is in keeping with the position that organizations that best evolve and manage their resources and capabilities in a consistent manner will outperform their competition. This leads to the following:

H4b: Organizations where the three domains align in the same strategic archetype (pure) will outperform those organizations where the majority of the domains do not align (random).

A further examination of the interactions with and between the domains and the strategic archetypes reveals that the individual archetypes are neither immutable in their boundaries nor mutually exclusive states. In reality, the four archetypes postulated by Miles and Snow (1978) may be actualized as organizational tendencies as opposed to absolutes. When these archetypes are viewed through the lenses of dynamic capabilities and ambidexterity, an organization's strategic archetype identification becomes more fluid.

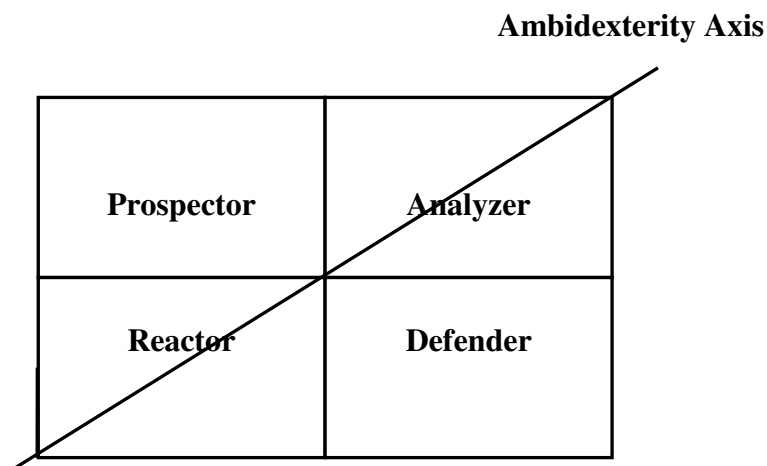
The ambidextrous organization, by definition is one that simultaneously pursues both explorative and exploitative activities, and whose long run success requires the pursuit of both these activities (Abernathy, 1978; Boumgarden et al., 2012; Ghemawat & Costa, 1993; March, 1991; Tushman & O'Reilly, 1997). "The basic problem confronting an organization is to engage in sufficient exploitation to ensure current viability, and at the same time, devote enough energy to exploration to ensure future viability" (March, 1991 p. 105). The position espoused here is that organizational performance increases as exploitation and exploration also increase. High levels of both exploitation and exploration, with periods of simultaneity optimize the generation of performance (Boumgarden et al., 2012).

As discussed earlier, one view of ambidexterity posits a balance between exploration and exploitation related activities with the establishment of the often cumbersome, hybrid structured organization (O'Reilly & Tushman, 2008). Another approach is that these two states do not simultaneously coexist, but rather they exist individually in a static and discrete manner (2002). A third, and emerging, view is that of

‘organizational vacillation’ which “emphasizes dynamically achieving high levels of both exploration and exploitation by temporally and sequentially alternating between . . . exploration and exploitation” (p. 588). In this view, management’s charter is to optimize long run performance by vacillating between the organizational modes and orientations and thus, leverage exploitative and explorative activities at levels beyond that achieved by static choice. A fundamental assumption in the organizational vacillation approach is that as these shifts occur, the organization’s level of exploration and exploitation both increase and dissipate as a result of inertia (Boumgarden et al., 2012).

The introduction of the concept of organizational vacillation, as presented in the current study, furthers the argument of a more fluid state in the ambidextrous organization. The introduction of organizational vacillation presents the view that high performance is achievable by dynamically vacillating between levels of exploration and exploitation with on average, an inconsistent balance. This balance will ultimately skew, even ever so slightly, towards either exploitation or exploration. In this light, ambidexterity is a strategic orientation that transects both the Reactor and Analyzer strategic archetypes. By their very nature, ambidextrous organizations exhibit a plurality in orientation. Figure 5 visually represents the concept.

Figure 5: Strategic Archetypes

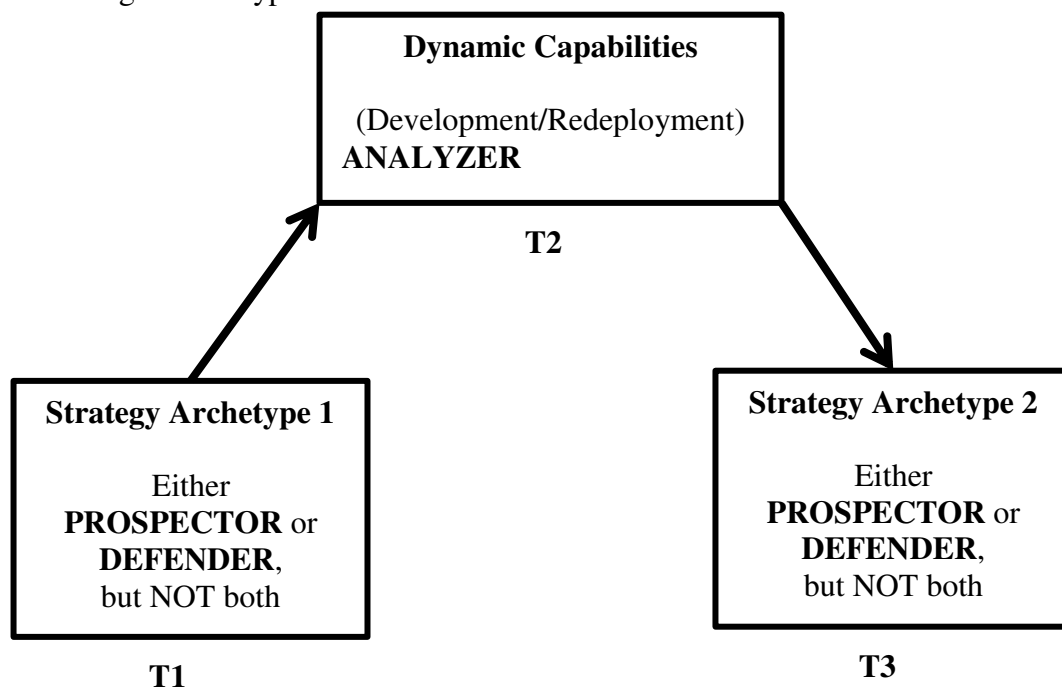


Of the four archetypes, the Analyzer and Reactor come closest to resembling the ambidextrous organization. The Analyzer seeks to both explore new products and market opportunities (similar to the Prospectors archetype) while simultaneously exploiting core skills, products and markets (similar to the Defender archetype). The Analyzer will often rapidly follow the Prospector, thus being labeled a ‘second mover’. The Reactor is more often seen as an ad hoc opportunist, flitting between explorative and exploitative activities with no apparent plan or consistency.

The Miles and Snow typology (1978) as originally presented and commonly accepted, view each of the proposed strategic archetypes as a static, immutable state for an organization. However, when deploying the lens of dynamic capabilities and further framing it with Boumgarden et al’s., (2012) argument for organizational vacillation, the static, immutability of the strategic archetypes warrants further examination. Dynamic capabilities entail the organization’s acquisition and deployment of new resources and the reconfiguration of existing resources in response to changes in the organization’s markets

and product domains (Eisenhardt, 2000). Boumgarden et al's., (2012) theory of organizational vacillation posits that optimizing an organization's long term performance requires the ability to vacillate, or shift, between organizational modes and orientations thereby leveraging both explorative and exploitative activities. In the current study organizational vacillation is represented as movement between the Prospector and Defender archetypes. This shifting between archetypes is also in keeping with Mintzberg and Waters' (1985) contention that as a result of organizational learning, strategies can move along a continuum. The figure 6 presents this concept.

Figure 6: Strategic Archetype Continuum

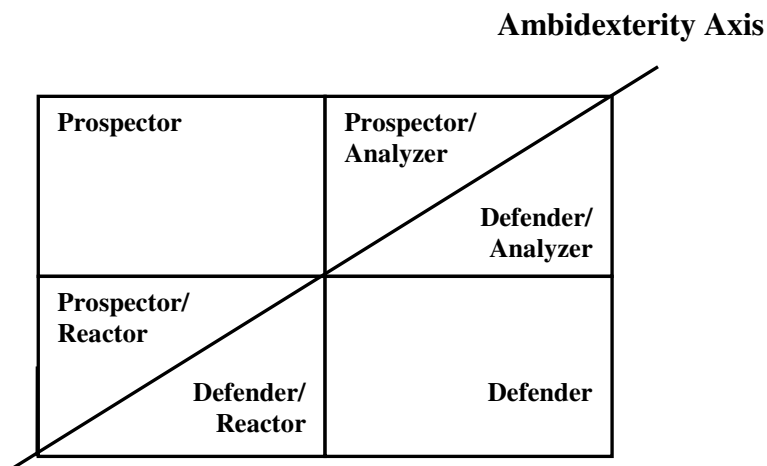


Because of resource constants (March, 1991; 2003), organizations ultimately develop a propensity towards one strategic archetype over another. When organizational vacillation is deliberately engaged in with specific intentions the Analyzer archetype is

the resulting archetype. However, when the vacillation is the result of sporadic and random activities, the Reactor is the resulting strategic archetype. For this reason, it is expected that organizations that are identified as members of either the Analyzer or Reactor archetype will also exhibit a tendency to exhibit either the Prospector or Defender characteristics as vacillation occurs.

As a result of this observation, it may be more accurate to disaggregate the Miles and Snow typology into six rather than four archetypes. The new proposed archetypes are Prospector (P), Prospector / Analyzer (PA), Defender / Analyzer (DA), Defender (D), Defender / Reactor (DR), and Prospector / Reactor (PR). Figure 7 visually presents the proposed reconfiguration.

Figure 7: Strategic Archetypes and Ambidexterity



This leads to the following hypotheses:

H4c: Organizations that do not fall firmly into either the Prospector or Defender strategic archetype are more likely to be classified as a variant of

ambidexterity, such that they exhibit some combination of either the Analyzer or Reactor strategic archetype and either a Prospector or Defender perspective.

Drivers of the Strategic Archetype

The focus of this research, to this point, has examined the alignment between the three problem domains and the four strategic archetypes. In order to close the loop in regards to the examination, the current study examines the level of influence each of the identified problem domains has on the strategic archetypes operationalized by the organization. This examination is taken in the context of the ongoing debate over which comes first, structure or strategy.

The debate over structure and strategy goes back to the findings in Chandler's seminal work, *Strategy and Structure: Chapters in the History of the American Industrial Enterprise* (Chandler, 1962). The focus of the debate revolves around the temporal sequence and importance of the strategy-structure conundrum. A wide breadth of scholars (Amburgey & Dacin, 1994; Donaldson, 1987; Hall & Saias, 1980; Mintzberg, 1978; Ramanujam & Varadarajan, 1989) have sought to explain the various strategy-structure configurations with conflicting results (Harris & Ruefli, 2000).

Chandler (1962) argued that organizational structure follows, or is a function of, the organization's strategy and correspondingly, controls must be aligned with the organization's plans. The central premise was that the changes in the organization's strategy lead to changes in administration – structure (Harris & Ruefli, 2000). In Chandler's (1962) view, strategy was “the determination of the basic long term goals and

objectives of an enterprise, and adoption of courses of action and the allocation of resources necessary for carrying out these goals” (p. 13); and therefore structure provides “the design of organizations through which the enterprise is administered” (p. 14).

Chandler (1962) further argued:

“Strategic growth resulted from an awareness of the opportunities and needs – created by changing populations, income, and technology – to employ existing or expanding resources more profitably. A new strategy required a new or at least refashioned structure if the enterprise was to be operated efficiently” (p. 915)

The opposing view espoused by researchers such as Child (1972), Fredrickson (1986), and Galbraith and Nathanson (1979) is that there is no equally major influence from structure to strategy. Many of these theorists posit that strategy follows structure because of the constraints imposed by the structure on the strategic options available to the organization’s management (Harris & Ruefli, 2000). Hall and Saias (1980) emphasize this point:

“It is necessary to recognize that in reality structure is the result of a complex play of variables other than strategy; culture, values, the past and present functioning of the organization, its history of success and failure, the psychology and sociological consequences of technological development, and so on. Structure, then, assumes a political content in the same way as strategy, and there is no reason to subordinate one to the other” (p. 161)

Harris and Ruefli (2000) suggested that the debate may in fact be one of a difference without relevance. That the causal linkage between strategy and structure change is most likely reciprocal, and to a degree, contingent upon the point of view of the observer.

The current study adopts the order that Miles and Snow (1978) presented and discussed the three problem domains and the relative significance of each. In keeping with RBV, the organization’s orientation toward each of the three problem domains is

assets that management must leverage in order to achieve a competitive advantage. As such and within the context of the Miles and Snow typology, the three problems can be viewed as the structural side of the debate; in so much as they ultimately influence the four archetypes, which can be viewed as the strategy side. This view through the RBV lens is in keeping with Chandler's (1962) conceptualization of structure as an administrative governor of the organization's strategies. In this sense, the structural elements of the three problems serve as a fulcrum upon which the organization's strategic orientation and subsequent archetype pivot. This position is also supported from the perspective of 'strategic coalignment', which deals with how the organization aligns or configures its internal resources and structures to fit with its external environment (Veliyath & Srinivasan, 1995). Its principal elements address the organizational impact of external environmental conditions (i.e., market and product), internal organizational elements (i.e., strategic resource allocation and utilization), and organizational arrangements (i.e., structures, systems, and culture) (Doty, Glick, & Huber, 1993; Miller, 1990).

Overlaying the Miles and Snow typology (1978) on the strategic coalignment model provides a means for beginning to determine the more nuanced nature of the relationship between the three problem domains and the four strategic archetypes. Accordingly, the entrepreneurial problem is suggested to be the first decision that an organization needs to reconcile. Recall, the entrepreneurial problem seeks to resolve the issues of the organization's interaction with its external environment. It is in essence the basis for the organization's strategy formulation, in that it establishes the organization's

decisions regarding not only what product or market domain to operate within, but how it intends to position itself. This leads to the following hypothesis:

H5a: The entrepreneurial problem is related to the organization's strategic archetype.

The engineering problem reflects management's decisions regarding the configuration of the organization's resources in response to the achievement of the organization's desired external outcomes (entrepreneurial problem) (Doty et al., 1993; Venkatraman, 1989) . In discussing RBV, Barney (1991) asserts that in order be competitive, the organization's resources need to be both valuable and rare. Sirmon et al., (2007) argue that resource management, the bundling and leveraging of the organization's resources, purpose is to facilitate the achievement of value creation for the customer. The engineering problem addresses issues surrounding the utilization of the resources necessary to achieve a solution to the entrepreneurial problem. How those resources are bundled and leveraged has the potential for altering the achievement of the organization's entrepreneurial problem. As a result, the engineering problem presents the potential for significantly influencing the interaction between the organization's entrepreneurial problem and its strategic archetype. This leads to the following hypothesis:

H5b: The engineering problem mediates the relationship between the entrepreneurial problem and the organization's strategic archetype.

The administrative problem deals with the internal arrangements of the organization inherent to the organization (i.e., its systems, structure, leadership and culture). The administrative problem addresses the supporting network of people and processes within the organization that facilitate the acquisition, deployment and utilization of the engineering problem's resources required to achieve the entrepreneurial problem solution. Moreover, while the administrative problem is argued to impact the operationalization of both the entrepreneurial and engineering problem, the actual level of influence it ultimately has on either the relationship between the entrepreneurial and engineering problems, or the engineering problem and the organization's strategic archetype may be more indirect and therefore serve to moderate the relationships. Understanding these potential interactions is important because an organization executes its operations in the way they organize their structure (Lavie et al., 2010).

Structure defines how power, resources and responsibilities are allocated across the organization. Alignment, or what Burns and Wholey (1993) refer to as mechanistic structures, support routine operations, functional specialization, and formal duties, responsibilities and power. Adaptive or organic structures provide for less ridged and more flexible organizations. The notion of balance between exploration and exploitation [ambidexterity] underscores the importance of providing for the simultaneous capabilities of alignment and adaptability. Gibson and Birkinshaw (2004) suggest that an organization can effectively balance activities by nurturing an appropriate organizational context that blends, stretch discipline, support and trust. Nurturing well designed systems [administrative problem] enables simultaneous alignment and adaptability. Extending this argument, one would expect to see some interaction effect (moderation) evident in

the relationship between the engineering problem and the organization's strategic archetype

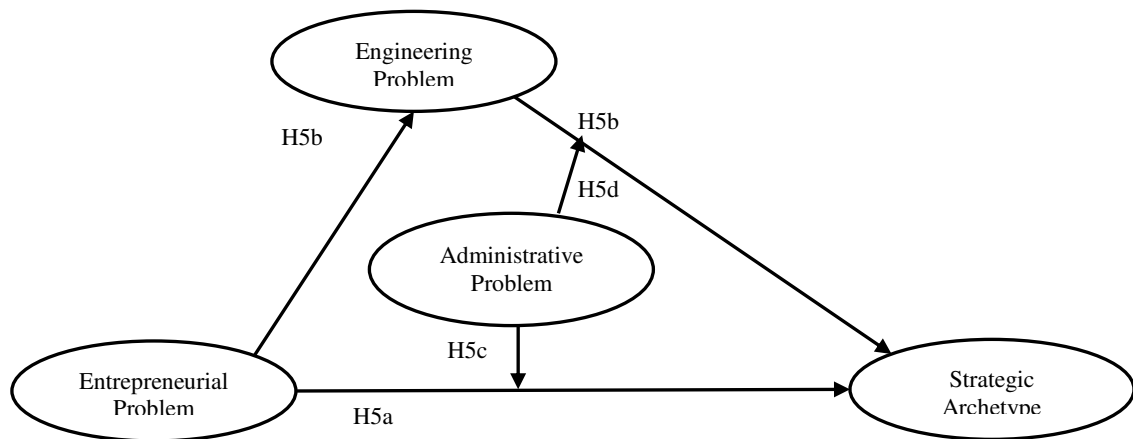
Hypothesis 5c and 5d seek to ascertain, to what extent if any, the influence of the administrative problem on the organization's strategic archetype. This leads to the following hypotheses:

H5c: The administrative problem moderates the relationship between the entrepreneurial problem and the organization's strategic archetype.

H5d: The administrative problem moderates the relationship between the engineering problem and the organization's strategic archetype.

Figure 8 presents the model of these hypotheses:

Figure 8: Drivers of Strategic Archetypes



CHAPTER 4: METHODS

To determine the proper sample size Hair et al. (2010) suggests a minimum ratio of five responses and 15 to 20 observations as the desired level for each independent variable. Based upon these guidelines a sample of 150 organizations would be sufficient. The final sample used in the study was collected utilizing the professional services division of Qualtric. To ensure that a minimum sample size of 150 was achieved, 984 companies were initially approached to participate. These respondents were screened against two qualifying criteria. First, the respondent had to have meaningful involvement in the development of their organization's strategy making activities. Second, those individuals had to indicate further that they held either an executive or senior level position in the organization (e.g., President, CEO, General Manager, or Vice President). Out of the initial 984 respondents, approximately 51% successfully passed the screening process thereby leaving the study with 503 respondents providing usable data, Table 4 presents the industry distribution of the sample.

Further analysis of the responding companies shows that 70% had less than 500 full time employees (FTEs), with 45% having less than 10 FTEs. Only 18% of the companies had stock that was issued on a recognized public exchange (e.g., NYSE, AMEX, and NADQ), with the remainder of the sample being privately held companies.

Industry type, as derived from NAICS codes, is well dispersed among the 20 major NAICS sectors. For example, 14% of the companies were classified in professional, scientific and technical service 13% in retail trade; and 11% in other services (except public administration). With respect to company age, 58% have been in existence for 20 years or less, with 30% in existence 10 years or less. Geographically, the companies represent all 50 states, with the five largest states by population also being the states with the largest number of respondents (i.e., 16% in California, 8% in New York, 7% in both Florida and Texas, and 5% in Illinois).

Table 4: Industry Distribution

	Number
Agriculture, Forestry, Fishing & Hunting	16
Mining, Quarrying, and Oil & Gas Extraction	6
Utilities	8
Construction	39
Manufacturing	39
Wholesale Trade	17
Retail Trade	63
Transportation & Warehousing	21
Information	32
Financial & Insurance	28
Real Estate and Rental & Leasing	17
Professional, Scientific, & Technical Services	68
Management of Companies & Enterprises	13
Administrative & Support & Waste Management & Remediation Services	6
Educational Services	11
Health care & Social Services	25
Arts, Entertainment, & Recreation	25
Accommodation & Food Service	7
Other Services (except Public Administration)	56
Public Administration	6
Total	503

Measures

All constructs are measured using previously published scales. Of those multi-item scales, each has shown acceptable validity and reliability in prior applications.

Dependent Variables

The four *strategic archetypes* were originally conceptualized as the result of the qualitative studies performed by Miles and Snow (1978). Conant et al. (1990) developed a multi-item scale for measuring the Miles and Snow strategic types and Desarbo et al. (2005) modified this scale into a more generic measure. The resulting questions are divided into the three problem domains of entrepreneurial, engineering and administrative decisions. The current study extends this approach by utilizing a series of related questions (Questions 4 through 14 on the survey instrument shown in Appendix 1), each representing varying facets of the three problem domains, to identify organizational archetype.

To assign companies to an archetype, Conant et al. (1990) and later Desarbo et al. (2005) utilized a modified ‘majority rule’ approach. The current study employed a similar ‘majority rule’ approach whereby an organization was classified as a Prospector or Defender when there was a clear majority. In cases where no majority was evident, the default was to be classified as either an Analyzer or Reactor. Organizations where the Analyzer designation was most evident were classified as such, with the remaining be classified as Reactors.

Performance

Performance – Utilizing the work first developed by Gupta and Govindarajan (1986) and later used by Covin, Prescott and Slevin (1990), performance was measured utilizing 7-point Likert scale (where 1 = much worse to 7 = much improved) covering the organization’s performance over the last 36 months in terms of growth in sales, growth in profit, growth in market share, return on equity, and return on total assets (Lubatkin et

al., 2006) (Questions 22 on the survey instrument shown in Appendix 1). While it is recognized that objective measures of performance may be preferred, they often are either not publicly available or considered proprietary by the organization. Wall et al., (2004) suggest that as a result of their studies, where both convergent and discriminant validity were confirmed, subjective measures of performance are a good and meaningful proxy for objective measures. Finally, absolute financial data does not always compare well across different industries (Covin et al., 1990).

Independent Variables

Entrepreneurial Domain

The entrepreneurial domain is a construct that often results from the dynamic interaction of exploration and exploitation (Benner & Tushman, 2003) wherein exploration and exploitation can be examined along their proximity to the organization's technology and product trajectory and the organization's existing customers and market segments (Questions in grouping 15 on the survey instrument shown in Appendix 1). The measure of ambidexterity that was originally developed by Cao et al. (2009) and He and Wong (2004) was used in this study. To provide greater precision, Cao et al. (2009) operationalized ambidexterity using two distinct dimensions; the Balanced Dimension (BD) and the Combined Dimension (CD). The BD examines the balance or relative magnitudes of explorative and exploitative related activities, and is calculated as the absolute difference between the exploration and exploitative. The CD, which examines the combined magnitude of exploration and exploitation, was calculated by multiplying the mean-centered values for both the explorative and exploitative variables. The BD

was used in this study because, as expressed by Cao et al. (2009), it provides for a clearer representation of the position of the organization's exploration and exploitation activities as they relate to the control of performance related risks.

Engineering Domain

The engineering domain is vital to organizational survival and success in that the result can often satisfy customers' needs and requirements more effectively than the organization's existing products or services (Lisboa, Skarmeas, & Lages, 2011; Yalcinkaya, Calantone, & Griffith, 2007). In order to prosper, or even survive, organizations typically must excel at both radical and incremental innovation (Tushman & O'Reilly, 1996).

The current study utilized Cheng and Shiu's (2008) 10-item measure of radical (explorative) and incremental (exploitative) innovation adapted from the works of Garcia and Calantone (2002), Gatigon et al., (2002), and Song and Montoya-Weiss (1998) (Questions in grouping 16 on the survey instrument shown in Appendix 1).

Administrative Domain

Administrative domain is the organization's alignment and consistency between its structure, orientation, and strategies. The two scales (structural and contextual) developed by Gibson and Birkinshaw (2004) was used to measure alignment and adaptability (Questions in grouping 17 on the survey instrument shown in Appendix 1).

Control Variables.

Based on existing research, we considered four control variables that thought to influence ambidexterity, strategic type, and organizational performance - organization size, company age, ownership structure, and industry.

Organization size – It is often assumed that larger organizations have more resources available to pursue a variety of opportunities. Firm size was measured using the natural log of the total number of full time employees (FTEs) at the time of the study (Covin, Green, & Slevin, 2006).

Organization age – During the life of an organization it is possible for it to transition between the various strategic archetypes. Organization age was measured by the number of years since the organization’s inception date (Covin et al., 2006).

Ownership structure – One or more of the variables of interest in the study may be affected by whether the organization is public (shares are traded on a public exchange) or private (shares are either not available for trade or are only available on a privately maintained buy / sell listing). A dummy variable was created to indicate ownership structure (1 = private and 0 = public).

Industry Classification Code –Using the North American Industry Classification Code (NAICS), companies were grouped by the primary classifications of construction, government, manufacturing, retail trade, services, wholesale trade, and other. This control was considered because to date, the Miles and Snow typology has been examined in diverse industry settings (Conant et al., 1990) and it is possible that industry may influence the dominance (or lack thereof) of one strategic type over the others.

Pilot Test

The initial survey instrument was distributed to 8 business executives representing diverse backgrounds and experience. The executives were asked to evaluate the instrument's ease of use (navigation) and readability. Additionally, they were asked to determine the amount of time required to complete the instrument. Their feedback resulted in a few minor changes in the instrument, mostly reflecting issues of readability.

The entire instrument was pilot tested on a sample drawn, utilizing distribution lists, from two different groups, the Amarillo Chamber of Commerce and the Amarillo Small Business Development Center. In addition, an initial sample was also drawn by the Qualtric Professional Services Division. The data was analyzed utilizing IBM PASW (SPSS) statistics. A reliability analysis (Cronbach's Alpha) was run to assess the consistency of the items used in the various scales. Results confirmed that measures in the survey were both reliable and valid.

CHAPTER 5: RESULTS

Table 5 presents the descriptive statistics, correlations and reliabilities of the key variables. A set of analyses employing the multiple discriminant analysis (MDA) methodology were used to test hypotheses H1a through H3d. Each set of analysis examined two separate, but related independent variables - explorative and exploitative orientation, radical and incremental innovation, and adaptive and alignment orientation, as predictors of an organization's strategic orientation. The dependent variable, strategic orientation, is comprised of four groups (i.e., Prospector, Analyzer, Defender and Reactor) thus supporting the use of MDA.

Table 5: Correlations and Descriptive Statistics

Variables	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11
1. Company age ^b	25.13	23.14											
2. Sales	4.75	1.42	.05										
3. Market Share	4.74	1.26	.06	.76**									
4. ROE	4.77	1.35	.08	.79**	.79**								
5. ROA	4.77	1.32	.08	.78**	.75**	.90**							
6. Explorative	3.98	1.39	.13**	.23**	.15**	.11*	.17**	.84					
7. Exploitative	4.38	1.31	.06	.13**	.07	-.01	.04	.65**	.88				
8. Radical Innovation	5.53	1.46	.06	.41**	.45**	.43**	.42**	.37**	.21**	.84			
9. Incremental Innovation	6.19	1.17	-.01	.29**	.28**	.28**	.29**	.30**	.31**	.56**	.89		
10. Alignment	4.90	1.86	-.18*	-.10*	-.16**	-.18**	-.16**	.10*	.33**	-.23**	.16**	.78	
11. Adaptiveness	5.67	1.49	-.04	.37**	.35**	.40**	.41**	.27**	.24**	.54**	.51**	.08	.67

^a n = 503; two-tailed test; α on the diagonal; ^b Logarithm; * $p < .05$, ** $p < .01$ level (2-tailed).

The first set of analysis examined the explorative and exploitative orientation as predictors on an organizations strategic archetype. Table 6 presents the means and standard deviations of the strategic archetypes. Two significant discriminant functions were calculated. For the combination of both discriminant functions (1 through 2) the Wilks' Lambda was computed, $\lambda = .52$, $\chi^2(6, N = 503) = 322.5$, $p < .01$. After the first function is removed, the test of function 2 is still significant, the Wilks' Lambda for the second discriminant function was also significant, $\lambda = .80$, $\chi^2(2, N = 503) = 110.7$, $p < .01$, indicating that the overall predictors differentiated among the four strategic archetypes (Prospector, Analyzer, Defender, and Reactor). The effect sizes for the discriminant functions are $(.59)^2 = .35$ and $(.45)^2 = .20$ respectively. The functions accounted for 53% and 25% of the total relationships between predictors and groups. The first discriminant function accounted for 68% of the between group (explained) variance in the solution, whereas the second discriminant function accounted for 32% of the variance. The correlations between discriminant variables and the first significant discriminant function was highest for explorative (.97), while exploitative (.64) was highest for the second discriminant function.

Table 6: Means and Standard Deviations

Strategic Archetype	N	Explorative		Exploitative		Radical Innovation		Incremental Innovation		Adaptiveness		Alignment	
		M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Prospector	10	4.60	.97	3.70	1.25	5.80	.92	4.80	1.40	5.80	1.14	3.30	.48
Analyzer	201	4.91	.82	5.20	.61	6.19	1.11	6.72	.78	6.26	1.13	5.55	1.91
Defender	59	2.73	1.00	4.47	.92	3.68	.80	5.88	.83	4.27	1.35	6.05	1.31
Reactor	233	4.47	1.38	3.69	1.43	5.43	1.46	5.87	1.32	5.50	1.55	4.13	1.57
Total	503	3.98	1.39	4.38	1.31	5.53	1.46	6.19	1.17	5.67	1.49	4.90	1.86

The relative strength of the two predictors can be more precisely assessed by calculating a potency index. More specifically, the potency index provides a relative

measure among all variables and is indicative of the discriminating power of each (Hair et al., 2010) and therefore is useful in depicting the relative rank order of each independent variable in predicting group membership. The potency index for the explorative orientation is .662 and .533 for exploitative.

As shown in Table 7, analysis resulted 70.4% of the sample being correctly classified into the theoretically derived strategic groups. In order to cross validate the classification results, the “leave-one-out” principle was employed. This approach is essentially a jackknife classification procedure whereby one of the cases is omitted in deriving the discriminant solution. Results were identical to the initial classification score.

Table 7: Classification Results

Strategic Orientation		Predicted Group Membership				Total
		Prospector	Analyzer	Defender	Reactor	
Original	Prospector	0	3	0	7	10
	Analyzer	0	176	8	17	201
	Defender	0	6	39	14	59
	Reactor	0	71	23	139	233
Cross-validated ^b	Prospector	0	3	0	7	10
	Analyzer	0	176	8	17	201
	Defender	0	6	39	14	59
	Reactor	0	71	23	139	233

a. 70.4% of original grouped cases correctly classified.

b. Each case is classified by the functions derived from all cases other than that case.

Press's Q was also calculated as a means to take into account chance agreement. Press's Q tests for the discriminatory power of the classification matrix when compared with chance (Hair et al., 2010). A value of 1430.06 was obtained, significantly exceeding the minimum threshold of the chi square value at .01 significant level (6.63) as suggested by Hair et al (2010). The four strategic orientations were plotted on a 2 x 2 matrix with

the explorative orientation represented on the 'y' axis and the exploitative on the 'x' axis. Each of the two axes has a range of value from 0 to 1 and intersects at 0. As indicated in table 6, the total mean for the explorative and exploitative axes are; $\bar{X} = 3.98$ and $\bar{X} = 4.38$ respectively.

The results of the analysis, as discussed, provide support for hypotheses 1a through 1d. Those organizations placing a greater emphasis on an explorative orientation over an exploitative orientation tended to exhibit a Prospector strategic orientation. Those organizations that place a relative equal emphasis on both an explorative and exploitative orientation frequently exhibited an Analyzer strategic orientation. Those organizations with a greater emphasis on an exploitative orientation over an explorative orientation exhibited a Defender strategic orientation. Finally, those organizations that placed a relatively equal, but diminished emphasis on both the explorative and exploitative orientation typically have a Reactor strategic orientation.

The second set of analysis examined the respective ability of radical and incremental innovation to predict an organization's strategic orientation. Because the dependent variable is the same here as in the previous analysis, two discriminant functions were derived. Table 6 presents the means and standard deviations of the strategic archetypes.

Two significant discriminant functions were calculated. For the combination of both discriminant functions (1 through 2) the Wilks' Lambda was computed, $\lambda = .63$, $\chi^2(6, N = 503) = 233.1$, $p < .01$. After the first function is removed, the test of function 2 is still significant, the Wilks' Lambda for the second discriminant function was also significant, $\lambda = .87$, $\chi^2(2, N = 503) = 70.6$, $p < .01$, indicating that the overall predictors

differentiated among the four strategic archetypes (Prospector, Analyzer, Defender, and Reactor). The effect sizes for the discriminant functions are $(.53)^2 = .28$ and $(.36)^2 = .13$ respectively. The functions accounted for 39% and 15% of the total relationships between predictors and groups. The first discriminant function accounted for 72% of the between group (explained) variance in the solution, whereas the second discriminant function accounted for 28% of the variance. The correlations between discriminant variables and the first significant discriminant function was highest for explorative (.98), while exploitative (.94) was highest for the second discriminant function.

The relative strength of the two predictors can be more precisely assessed by calculating a potency index. The overall potency index for the explorative orientation is .697 and .333 for exploitative.

As shown in Table 8, analysis resulted 56.9% of the sample being correctly classified into the theoretically derived strategic groups. Results were identical to the initial classification score. A value of 272.29 was obtained for the Press's Q test, significantly exceeding the minimum threshold of the chi square value at .01 significant level.

The four strategic orientations were once again plotted on a 2 x 2 matrix with the radical innovation represented on the 'y' axis and the incremental innovation on the 'x' axis. As indicated in table 6, the total mean for the radical innovation and incremental innovation axes are; $\bar{X} = 5.35$ and $\bar{X} = 6.19$ respectively. These results provide support for hypotheses 2a through 2d. Those organizations placing a greater emphasis on radical innovation over an incremental innovation tended to exhibit a Prospector strategic orientation whereas those that place a relative equal emphasis on both radical and

incremental innovation frequently exhibited an Analyzer strategic orientation. Likewise, those organizations placing greater emphasis on incremental innovation over radical innovation frequently exhibited a Defender strategic orientation while those placing a relatively equal, but diminished emphasis on both radical and incremental innovation typically exhibited a Reactor strategic orientation.

Table 8: Classification Results

Strategic Orientation		Predicted Group Membership				Total
		Prospector	Analyzer	Defender	Reactor	
Original	Prospector	2	1	1	6	10
	Analyzer	0	119	7	75	201
	Defender	0	1	24	34	59
	Reactor	2	74	16	141	233
Cross-validated ^b	Prospector	2	1	1	6	10
	Analyzer	0	119	7	75	201
	Defender	0	1	24	34	59
	Reactor	2	74	16	141	233

a. 56.9% of original grouped cases correctly classified.

b. Each case is classified by the functions derived from all cases other than that case.

The third, and final set of, analysis in this series examined the likely ability of adaptive and alignment orientations to predict an organization's strategic orientation. Once more, since there were four groups in the dependent variable, two discriminant functions were derived. Table 6 presents the means and standard deviations of the strategic archetypes.

Two significant discriminant functions were calculated. For the combination of both discriminant functions (1 through 2) the Wilks' Lambda was computed, $\lambda = .67$, $\chi^2(6, N = 503) = 199.0$, $p < .01$. After the first function is removed, the test of function 2 is still significant, the Wilks' Lambda for the second discriminant function was also significant, $\lambda = .83$, $\chi^2(2, N = 503) = 92.2$, $p < .01$, indicating that the overall predictors

differentiated among the four strategic archetypes (Prospector, Analyzer, Defender, and Reactor). The effect sizes for the discriminant functions are $(.44)^2 = .19$ and $(.41)^2 = .17$ respectively. The functions accounted for 24% and 20% of the total relationships between predictors and groups. The first discriminant function accounted for 54% of the between group (explained) variance in the solution, whereas the second discriminant function accounted for 46% of the variance. The correlations between discriminant variables and the first significant discriminant function was highest for explorative (.91), while exploitative (.95) was highest for the second discriminant function.

The relative strength of the two predictors can be more precisely assessed by calculating a potency index. The overall potency index for the explorative orientation is .527 and .467 for exploitative.

As shown in Table 9, analysis resulted 64% of the sample being correctly classified into the theoretically derived strategic groups. Results were identical to the initial classification score. A value of 412.54 was obtained for the Press's Q test, significantly exceeding the minimum threshold of the chi square value at .01 significant level. The four strategic orientations were once again plotted on a 2 x 2 matrix with alignment represented on the 'y' axis and the adaptiveness on the 'x' axis. As indicated in table 6, the total mean for alignment and adaptiveness are; $\bar{X} = 4.90$ and $\bar{X} = 5.67$ respectively.

The results from the analysis provide support for three out of four hypotheses. Supporting hypotheses 3a, those organizations placing a greater emphasis on an adaptive orientation over an alignment orientation were more likely to exhibit a Prospector strategic orientation. Consistent with hypothesis 3c those organizations placing greater

emphasis on an alignment orientation over an adaptive orientation typically exhibited a Defender strategic orientation. Finally and supporting hypotheses 3d organization that placed a relatively equal, but diminished emphasis on both an adaptive and alignment orientation tended to exhibit a Reactor strategic orientation. Hypothesis 3b, which predicted that organizations placing a relative equal emphasis on both an adaptive and alignment orientation would exhibit an Analyzer strategic orientation, was only partially supported. Here, the mean of the alignment functions exceeded the $\bar{X}= 4.90$ cut off by 0.65, moving it into the territory of the Prospector.

Table 9: Classification Results

Strategic Orientation		Predicted Group Membership				
		Prospector	Analyzer	Defender	Reactor	Total
Original	Prospector	0	0	0	10	10
	Analyzer	0	124	3	74	201
	Defender	0	17	18	24	59
	Reactor	0	43	9	181	233
Cross-validated ^b	Prospector	0	0	0	10	10
	Analyzer	0	124	3	74	201
	Defender	0	17	18	24	59
	Reactor	0	43	9	181	233

a. 64.2% of original grouped cases correctly classified.

b. Each case is classified by the functions derived from all cases other than that case.

A two-way contingency table analysis was conducted to evaluate whether the more consistent the individual domain orientation of the organization (entrepreneurial, engineering, and administrative), the more likely it represented an organization with a singular strategic archetype, as posited in hypothesis 4a. Accordingly, a consistent or otherwise termed 'pure' domain is one where all three of an organization's domains plot on the same quadrant. Table 10 presents the proportion of organizations whose strategic archetype was pure Prospector, Analyzer, Defender or Reactor. As seen, 142 of the

sample's 503 organizations are identified as having a pure domain orientation and a corresponding singular strategic archetype.

Table 10: Strategic Archetype * Domain Orientation Cross Tabulation

Strategic Archetype	Domain Orientation		Total
	Random	Pure	
Prospector	10	0	10
Analyzer	93	108	201
Defender	47	12	59
Reactor	211	22	233
Total	361	142	503

The results of the analysis indicate there is a significant relationship between an organization's consistency in its approach to the three domains and their ultimate strategic archetype. The strength of the association is considered strong as measured by Cramer's V ($\phi_c = .469$) (Green, Salkind, & Akey, 2011). Additionally, the results for the Pearson χ^2 ($3, N = 503$) = 110.86, $p = .000$ further indicate a statistically significant association for those organizations who are pure in their approach to the three domains and their strategic archetype. These findings support hypothesis 4a.

Hypothesis 4b proposed that organizations where the domains consistently align with their respective strategic archetype will outperform those organizations where the domains do not align. With this hypothesis, multivariate analysis of variance (MANOVA) was used to test differences in means between two independent variables across four continuous dependent variables. Specifically, the independent variables encompassed the domain orientation of the organization, broken into two groups; pure and random. These variables are hypothesized to differentially effect organizational performance (i.e., sales, market share, ROE and ROA). Four control variables were

initially included in the analysis – size, age, industry, and structure. Only the significant variables, size and age, were retained in the final analysis.

Descriptive statistics related to this hypothesis are shown in Table 11. A statistically significant Box's test ($F = 8.25; p < .001$), indicates that the observed covariance matrices of the dependent variable are unequal across the independent variable groups. The Bartlett's test of sphericity was also statistically significant ($\chi^2 = 1677.503, p < .01$), indicating sufficient correlation between the dependent measures (Meyers, Gamst, & Guarino, 2013). A Pillai's trace and Hotelling's T^2 (two equivalent tests of differences; Hair et al., 2010) were employed to evaluate all multivariate effects (Meyers et al., 2013). As shown in Table 12, the composite dependent variate comprised of the sales, market share, ROE and ROA, was significantly affected by domain orientation ($V = .023$ and $T^2 = .024, F(4, 496) = 2.941, p < .05$).

Table 11: Means and Standard Deviations

Variable	Pure		Random	
	M	SD	M	SD
Sales	4.89	1.45	4.69	1.41
Market Share	4.78	1.25	4.72	1.26
ROE	4.72	1.33	4.79	1.35
ROA	4.76	1.32	4.77	1.31

Table 12: Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Pure	Pillai's Trace	.023	2.94	4.00	496	.020	.023
Domain	Hotelling's Trace	.024	2.94	4.00	496	.020	.023

Univariate ANOVAs were conducted on each dependent measure to determine the locus of the statistically significant multivariate effect. As shown in Table 13, neither ROE nor ROA were significant at less than .05, but both sales and market share are

significant ($F = 8.75, p < .05$ and $F = 5.33, p < .05$ respectively). While not significant at less than .05, ROA was significant at less than .10 ($F = 2.77, p < .10$).

Table 13: Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Pure Domain	Sales	15.46	1	15.46	8.75	.00	.017
	Market Share	6.84	1	6.84	5.33	.02	.011
	ROE	2.51	1	2.51	1.74	.19	.003
	ROA	3.94	1	3.94	2.76	.10	.006

This conclusion was further supported by an examination of the coefficient for the linear combinations. As shown in Table 14, sales and market share contribute most to distinguishing between those organizations with a pure domain and those that are random. In particular, sales ($\beta = -.395, p < .01$, multivariate $\eta^2 = .02$) and market share ($\beta = -.263, p < .01$, multivariate $\eta^2 = .01$) contributed statistically significantly toward discriminating a random domain from a pure domain. As previously discussed, ROA was also significant at the less than .10 level ($\beta = -.200, p < .10$, multivariate $\eta^2 = .01$). It is noted that these two variables exhibit a small effect size, a topic discussed in greater depth later in the paper. Taken in its entirety, the findings partially support hypothesis 4b.

The final hypothesis (Hypothesis 4c) in this series proposed that organizations that do not fall firmly into either the prospector or defender strategic archetype would be ambidextrous because they exhibit some combination of archetypes. An examination of both the analyzer and reactor strategic archetypes as presented in Table 15 shows that 201 companies in the sample were classified as Analyzers and 233 as Reactors. Further examination of the two archetypes reveals that of the 201 Analyzers, 9 can be viewed as

Analyzers with a Prospector tendency and 69 with a Defender tendency. The remaining 123 companies exhibited a pure Analyzer archetype. This latter group of organizations was ones whose assignment landed on the 45° diagonal between the two axes of explorative and exploitative orientations. Examination of the Reactor archetype shows that only 3 of these organizations exhibit a tendency towards the Defender archetype. Another 3 Reactors tended towards the Prospector archetype. The remaining 221 companies exhibited a pure Reactor archetype.

Table 14: Coefficients for the Linear Combinations

Dependent Variable	Parameter	B	Std. Error	t	Sig.	Partial Eta Squared	Observed Power
Sales	Intercept	4.62	.13	36.18	.00	.72	1.00
	Organization's Age	-.01	.00	-2.37	.02	.01	.66
	Organization's Size	.65	.08	8.44	.00	.13	1.00
	Pure Domain	-.40	.13	-2.96	.00	.02	.84
Market Share	Intercept	4.48	.11	41.21	.00	.77	1.00
	Organization's Age	-.01	.00	-3.14	.00	.02	.88
	Organization's Size	.70	.07	10.69	.00	.19	1.00
	Pure Domain	-.26	.11	-2.31	.02	.01	.64
ROE	Intercept	4.36	.12	37.88	.00	.74	1.00
	Organization's Age	-.01	.00	-2.97	.00	.02	.84
	Organization's Size	.78	.07	11.21	.00	.20	1.00
	Pure Domain	-.16	.12	-1.32	.19	.00	.26
ROA	Intercept	4.43	.11	38.74	.00	.75	1.00
	Organization's Age	-.01	.00	-2.68	.01	.01	.76
	Organization's Size	.709	.069	10.33	.000	.176	1.00
	Pure Domain	-.200	.120	-1.66	.097	.006	.38

Table 15: Analysis of Analyzer & Reactor Archetypes

Strategic Archetype	Frequency	Cumulative Percent
Prospector / Analyzer	9	4.5
Analyzer	123	65.7
Analyzer / Defender	69	100.0
Total	201	
Defender / Reactor	3	1.3
Reactor	227	98.7
Reactor / Prospector	3	100
Total	233	

While the majority of the hypotheses were supported, there were a few results where the effect size was small, suggesting minimal practical significance of these specific findings. However, it is also possible that the effect size is a function of other factors in the study. For example and consistent with Cohen's (1988) caution on range restrictions, Breaugh (2003) noted that in the case of dichotomous variables, the maximum point-biserial correlation cannot be 1.00, but rather will fall somewhere between .80 and .27 (50-50 group split to 99-1 group split respectively). This in turn, has an influence on the extent to which a strong effect size will be reported. He also argued that categorical data (relative to continuous data) can also result in an underestimation of the strength of the relationship between variables. Other research has also pointed out that effect size is just one side of the same coin. It complements, but does not replace a statistically significant association between variables or groups (Fan, 2001).

To better understand the relationship between variables in a study, an odds ratio can be a useful addition to the reported effect size. To calculate the odds ratio related to hypotheses 4b, the two significant performance measures, sales and market share, were each divided into three conditions (high, medium, and low) using a mean split based on

the information provided in Table 11. Groups were then created using these three performance conditions and the two domain orientations (pure and random). Next, relative odds ratios were calculated using the formula $(n_{c1}/n_{r1})/(n_{c2}/n_{r2})$, where c = column and r = row. The results from this set of calculations are presented in Tables 16 (detailed calculations available upon request).

Table 16: Relative Odds Ratios

	Pure	Random	Odds Ratio
Sales			
High	$n = 23$	$n = 61$	$.27/.73 = .37$
Moderate	$n = 95$	$n = 267$	$.26/.74 = .35$
Low	$n = 24$	$n = 33$	$.42/.58 = .72$
Market Share			
High	$n = 14$	$n = 44$	$.24/.76 = .32$
Moderate	$n = 81$	$n = 213$	$.28/.73 = .38$
Low	$n = 47$	$n = 104$	$.31/.69 = .45$

The association between firm performance and domain orientation was examined by calculating an odds ratio for two conditions at a time (Breugh, 2003). Accordingly, the odds ratio for high sales versus moderate sales is 1.05 (i.e., $.37/.35$), for high sales versus low sales is $.51$, and for moderate sales and low sales is $.49$. Likewise, the odds ratio for high market share versus moderate market share is $.84$, for high market share versus low market share is $.71$, and for moderate market share and low market share is $.84$.

When interpreting the ratios, Haddock, Rindskopf, and Shadish (1998, p. 342) stated, “as general rules of thumb, odds ratios close to 1.0 represent a weak relationship between variables, whereas odds ratios over 3.0 for positive associations (less than one-third for negative associations) indicate strong relationships.” Based on this rule, the strength of the relationship between orientation domain and firm performance,

particularly for sales, while weak, is probably a bit stronger (i.e., closer to moderate) than indicated by the effect size alone.

Because Hypotheses 5a through 5d considered the relation of each of the identified problem domains on the strategic archetypes entailed a single categorical dependent variable (DV), with four groups, and a single predictor or independent variable (IV) measured on a continuous scale, Hair et al (2010) suggest the use of standard multinomial logistic regression as being appropriate in these instances. In keeping with this suggestion, Reactor archetype was used as the reference category. In addition, while all four control variables were initially included in the analyses, only the significant variable, size, is included in the final model.

Hypothesis 5a considered the relationship of the entrepreneurial problem domain on the strategic archetypes. As discussed, the entrepreneurial problem domain focuses on the extent to which the organization seeks to exploit existing products or markets as well as explore new opportunities for products and markets. Following the work of Cao et al (2009), each of the three problem domains can be expressed as integrative constructs. In the case of the entrepreneurial problem domain, the measures of exploration and exploitation are integrated into the single construct. The balanced dimension (BD) approach (Cao et al, 2009; He & Wong, 2004) utilizes the absolute difference between exploration and exploitation, was used in this test. The balanced dimension was utilized in keeping with the opinion expressed by Cao et al's (2009) that it provides for a clearer representation of the relative position of exploratory and exploitative activities to each other. That such a balance contributes to an organization's ability to control performance related risks and by extension performance. To further facilitate the interpretation, and

following Cao et al's (2009), the resulting difference score was subtracted from 5, such that a higher value represented a greater balance between exploration and exploitation.

Results of the multinomial logistic regression indicate that the predictor is statistically significant. The -2 Log Likelihood measure utilized in logistic regression is comparable to the F test utilized in multiple regression. In this analysis, -2 Log Likelihood = 63.56, χ^2 (3, N=503) = 104.394, $p < .001$. A statistically significant -2 Log Likelihood for the base model that is smaller than the intercept only (i.e., 63.056 versus 167.450) is indicative of a better model fit. Examination of the Nagelkerke pseudo R^2 (.213), indicates that the model accounts for approximately 21% of the total variance.

The prediction success for the cases used in developing the model is modest, with an overall prediction success of 49.7% and correct prediction rates of 0%, 62.7%, 27.1% and 46.7% for the Prospector, Analyzer, Defender and Reactor respectively, table 17. As in earlier tests, Press's Q was calculated in order to take into account chance agreement in the predictive ability of the model. A value of 163.69 exceeding the minimum threshold of 6.63 (χ^2 at .01 significant level).

Table 17: Frequency of Predictor Variables

Observed	Predicted				Percent Correct
	Prospector	Analyzer	Defender	Reactor	
Prospector	0	2	1	7	0.0%
Analyzer	0	126	2	73	62.7%
Defender	0	5	16	38	27.1%
Reactor	0	116	9	108	46.4%
Overall Percentage	0.0%	9.5%	5.6%	44.9%	49.7%

The regression coefficients (β), the Wald test (which is the equivalent to a t -test in multiple regression), the adjusted odds ratio [Exp (β)], and the 95% confidence intervals

(CI) for the odds ratio are presented for each of the three models in Table 18. In the first model the β indicates that for every unit of increase in the entrepreneurial domain, organizations are 71% less likely to adopt a Prospector's archetype over a Reactor. This is supported with a significant Wald statistic of 4.96 ($p < .05$). The Analyzer, on the other hand is 42% more likely to be chosen (Wald = 9.73, $p < .05$) and the Defender is 121% less likely to be chosen (Wald = 51.48, $p < .00$). These combined results provide support for hypothesis 5a; the entrepreneurial domain is related to the organization's strategic archetype.

Hypothesis 5b posits that the predictive effect of the entrepreneurial problem on the organization's strategic archetype is mediated by the engineering problem. When one or more of the dependent variables in the mediation analysis is categorical, as is the case with strategic archetype, MacKinnon (2007, Chap. 11) suggests that logistic regression be utilized because the categorical dependent variable violates several assumptions of ordinary regression. However, because the relationship between the independent variable and the mediator are continuous, it is important to note that this specific relationship was examined using linear regression.

Table 18: Parameter Estimates

Strategic Archetype		β	Std. Error	Wald	d.f	Sig.	Exp(β)	95% Confidence Interval for Exp(β)	
								Lower Bound	Upper Bound
	Intercept	-.29	1.24	.05	1	.82			
Prospector	Entrepreneurial Domain	-.71	.32	4.96	1	.03	.49	.26	.92

Strategic Archetype		β	Std. Error	Wald	d.f	Sig.	Exp(β)	95% Confidence Interval for Exp(β)	
								Lower Bound	Upper Bound
Analyzer	Intercept	-2.01	.61	10.93	1	.00			
	Entrepreneurial Domain	.42	.14	9.73	1	.00	1.53	1.17	1.99
Defender	Intercept	3.20	.65	26.15	1	.00			
	Entrepreneurial Domain	-1.21	.11	51.48	1	.00	.30	.21	.41

To test for mediation Baron and Kenny (1986) recommend that the researcher follows a three step process. First; regress the independent variable on the mediator variable. Second regress the dependent variable on the independent variable. Thirdly, regress the dependent variable on both the independent variable and on the mediator. It is expected that when mediation occurs, the nature of the unmediated relationship between the independent and dependent variable changes. If full mediation occurs, the significant effect of the independent variable on the dependent variable disappears with the significant effect of the independent variable carried between the mediator and the dependent variable. In the case of partial mediation, the significant effect between the independent variable and the dependent variable remains, but is reduced.

Table 19 shows the results of testing for mediation. Specifically, the inclusion of the entrepreneurial problem in the model is significant ($F = 45.49, p < .00$) and the adjusted R^2 (.08) explains just the significant control variable, company size. Moreover, the relationship between the entrepreneurial problem (independent variable) and the

engineering problem (mediator variable) is significant ($b = .31, p < .00$), thereby meeting the first condition of mediation.

Table 19: Test of Mediating Effect of the Engineering Domain on the Relationship Between the Entrepreneurial Problem and Strategic Archetype

Step	Independent	Mediator (Engineering Domain)			Dependent (Prospector)	
		<i>b</i>	(.05)**	Adj. R ²	F	<i>b</i>
1	Company Size	.28	(.05)**	.16	46.56**	
	Entrepreneurial Domain	.31	(.05)**			
2	Company Size					1.20 (.54)**
	Entrepreneurial Domain					-.88 (.33)**
3	Company Size					1.62 (.59)**
	Engineering Domain					-.95 (.29)**
	Entrepreneurial Domain					9.64 (.33)**
<i>(Analyzer)</i>						
<i>b</i>						
2	Company Size					-.19 (.11)**
	Entrepreneurial Domain					-.46 (.14)**
3	Company Size					-.27 (.12)*
	Engineering Domain					.31 (.12)**
	Entrepreneurial Domain					.43 (.14)**
<i>(Defender)</i>						
<i>b</i>						
2	Company Size					-.79 (.23)**
	Entrepreneurial Domain					-1.00 (.17)**
3	Company Size					-.49 (.25)*
	Engineering Domain					-.79 (.16)**
	Entrepreneurial Domain					-.99 (.18)**

N=503; *Unstandardized coefficients reported with standard error in parenthesis*

* $p < .05$, ** $p < .01$

The results of the logistic regression that contain steps 2 and 3 (Baron & Kenny, 1986) are shown in Table 19. Supporting step 2 in the test of mediation, findings demonstrate that the entrepreneurial problem had a significant effect on the Prospector archetype ($b = -.88, p < .00$), the Analyzer archetype ($b = -.46, p < .00$), and the Defender

archetype ($b = -1.10, p < .00$). With the inclusion of the mediator (the engineering problem) the significance of the coefficient for the Prospector decreased ($b = -.95, p = .05$), as it also did for the Analyzer ($b = .31, p < .00$), and the Defender ($b = -.79, p < .00$). In total, the effect of the entrepreneurial problem is reduced but still maintains a significant effect on strategic archetypes with the engineering problem included in the model, thereby demonstrating a partially mediated relationship.

Hypotheses 5c and 5d considered whether the effect of the entrepreneurial problem and the engineering problem respectively on the organization's strategic archetype depended upon the influence of the administrative problem. Specifically, hypothesis 5c explores whether the relationship between the entrepreneurial problem and the strategic archetypes varies with different levels of the administrative problem. Similarly, hypothesis 5d examines whether the relationship between the engineering problem and the strategic archetypes is dependent on the levels of the administrative problem.

Keeping with the approach suggested by Baron and Kenny (1986), three steps were needed to determine if an interaction exists. The first step establishes the base model and examines the relation between the independent variable (entrepreneurial problem for hypothesis 5c and engineering problem for hypothesis 5d) and the outcome variable (strategic archetype). The second step involves the inclusion of the second variable, the moderator (administrative problem), into the model. The third step examines the strength of the interaction, if any, between the two variables and the outcome. The interaction terms were created by multiplying the entrepreneurial problem by the administrative problem for 5c, and the engineering problem by the administrative

problem for 5d. Prior to implementing each of the aforementioned steps all predictor variables were mean centered to reduce the possible effect of multicollinearity.

As noted above, hypothesis 5c considers the interaction between the entrepreneurial and administrative problems. Table 20 presents the result of the steps in testing for the existence of a moderation effect. Findings indicate that the model examining the relationship between the entrepreneurial problem and the strategic archetypes is significant ($\chi^2 = 91.65, p < .000$) as is each of the specific archetypes.

Table 20: Results of Entrepreneurial x Administration Interaction

Variables	Model 1					
	Prospector		Analyzer		Defender	
	B	Std. Error	B	Std. Error	B	Std. Error
Control variables						
Company Size	1.20	(.54)	-.19	(.11)	-.79	(.23)
Predictors						
Entrepreneurial						
Administrative						
Interaction Terms						
Entrepreneurial X Administration						
Constant	-1.23	(1.40)	-2.01	(.61)	3.29	(.64)
LR χ^2	91.65**					
Log-likelihood	247.35					
Likelihood ratio test	62.76					
Variables	Model 2					
	Prospector		Analyzer		Defender	
	B	Std. Error	B	Std. Error	B	Std. Error
Control variables						
Company Size	1.12	(.56)	-.07	(.13)	-1.01	(.29)
Predictors						
Entrepreneurial	-.96	(.34)	.50	(.14)	-1.23	(.19)
Administrative	-.17	(.23)	.18	(.07)	-.38	(.12)
Interaction Terms						
Entrepreneurial X Administration						
Constant	-.31	(1.79)	-2.85	(.70)	5.07	(.91)
LR χ^2	20.83**					
Log-likelihood	488.93					
Likelihood ratio test	77.90**					

Variables	Model 3					
	Prospector		Analyzer		Defender	
	B	Std. Error	B	Std. Error	B	Std. Error
Control variables						
Company Size	1.13	(.57)	-.07	(.13)	-1.01	(.25)
Predictors						
Entrepreneurial	-1.06	(.35)	.48	(.14)	-1.37	(.21)
Administrative	-.28	(.25)	.16	(.08)	-.46	(.13)
Interaction Terms						
Entrepreneurial X Administration	.05	(.06)	.01	(.02)	.08	(.04)
Constant	.46	(1.87)	-2.71	(.76)	5.91	(1.04)
LR χ^2	5.62					
Log-likelihood	842.77					
Likelihood ratio test	78.66					

The reference category is: Reactor: *Unstandardized coefficients reported;*

* $p < .05$, ** $p < .01$

Model 2 with the moderator included is also significant ($\chi^2 = 20.83, p < .00$). With respect to each individual strategic archetype, the moderator is not significantly related to the Prospector archetype ($b = -.17, p = ns$), but it was significant with the Analyzer ($b = .18, p < .05$), and Defender ($b = -.38, p < .00$) archetypes.

Model 3 presents the interaction effect. Not only is the model with this interaction not significant ($\chi^2 = 5.62, p = ns$), but so too is the interaction effect on the Prospector ($b = .05, p = ns$) and the Analyzer ($b = .01, p = ns$). While the interaction effect on the Defender is significant ($b = .08, p < .05$), the model itself, as noted, is non-significant. Thus, hypothesis 5c is not supported.

A similar procedure was followed to examine hypothesis 5d. Table 21 presents the result of testing for the existence of a moderation effect. The findings indicate that the model examining the relationship between the engineering problem and the strategic archetypes is significant ($\chi^2 = 82.90, p < .00$) as are each of the specific archetypes. Table 21 present the results from the second step where the moderator variable, administrative

problem, is entered into the equation. Again, as in 5c the model with the moderator included is significant ($\chi^2 = 13.67, p < .05$). With respect to each individual strategic archetype, the moderator was not significantly related to the Prospector archetype ($b = -.19, p = ns$), but it was significant with respect to the Analyzer ($b = .17, p < .05$) and Defender ($b = -.24, p < .05$) archetypes. Finally, Table 21 presents the results from the third step where the interaction term is entered into the equation. Not only is the model with this interaction not significant ($\chi^2 = 5.21, p = ns.$), but so too is the interaction effect on the Prospector ($b = -.18, p = ns$) and the Defender ($b = -.21, p = ns$). While the interaction effect on the Analyzer is significant ($b = .25, p < .05$), the model itself is non-significant. Hypothesis 5d is therefore not supported either.

Table 21: Results of Engineering x Administration Interaction

Variables	Model 1					
	Prospector		Analyzer		Defender	
	B	Std. Error	B	Std. Error	B	Std. Error
Control variables						
Company Size	1.51	(.58)	-.21	(.12)	-.66	(.23)
Predictors						
Engineering						
Administrative						
Interaction Terms						
Engineering X Administration						
Constant	-1.29	(1.11)	-1.52	(.50)	2.05	(.49)
LR χ^2	82.90**					
Log-likelihood	336.21					
Likelihood ratio test						

Variables	Model 2					
	Prospector		Analyzer		Defender	
	B	Std. Error	B	Std. Error	B	Std. Error
Control variables						
Company Size	1.43	(.60)	-.09	(.13)	-.81	(.25)
Predictors						
Engineering	1.09	(.29)	.40	(.12)	-.86	(.15)
Administrative	-.19	(.23)	.17	(.07)	-.24	(.12)
Interaction Terms						
Engineering X Administration						
Constant	-.52	(1.40)	-2.33	(.61)	2.94	(.70)
LR χ^2	13.67*					
Log-likelihood	510.40					
Likelihood ratio test	53.19**					
Variables	Model 3					
	Prospector		Analyzer		Defender	
	B	Std. Error	B	Std. Error	B	Std. Error
Control variables						
Company Size	1.46	(.60)	-.05	(.13)	-.80	(.25)
Predictors						
Engineering	-1.01	(.29)	.41	(.12)	-.86	(.15)
Administrative	-.18	(.22)	.25	(.08)	-.21	(.12)
Interaction Terms						
Engineering X Administration						
Constant	.56	(1.37)	-2.62	(.63)	2.86	(.70)
LR χ^2	5.21					
Log-likelihood	852.64					
Likelihood ratio test	55.15**					

The reference category is: Reactor: *Unstandardized coefficients reported;*

* $p < .05$, ** $p < .01$

CHAPTER 6: DISCUSSION

This study re-examines the original Miles and Snow (1978) typology utilizing the lenses of dynamic capabilities with an emphasis on ambidexterity. In their original work, Miles and Snow (1978) laid the foundation for the concept of strategic equifinality. The basic tenet of which, is that within any particular industry or environment, there is more than one way to succeed. However, they also stressed that the options are not endless. Rather, there are a few basic patterns (i.e., strategic profiles) that organizations can adopt that facilitate the accomplishment of their goals.

The inclusion of the lenses of dynamic capabilities and ambidexterity precisely builds upon the concept of equifinality by aiding in the identification of the patterns. These lenses contribute to the recognition of the patterns identified by Miles and Snow (1978) as the Prospector, Analyzer, Defender and Reactor. This study sought to contribute to both the scholarly and practitioner literatures by developing a deeper understanding of those strategic archetypes. By extension, the additional insights provided by the lenses of dynamic capabilities and ambidexterity also contribute to our understanding of the drivers of sustained competitive advantage.

This study contributes to extant literature in five interrelated ways. First, a contemporary examination of Miles and Snow's (1978) work is offered 35 years after they first presented their findings. Second, the original work of Miles and Snow (1978) is extended through the application of the lenses of dynamic capabilities and ambidexterity. Third, the scope of the original study is expanded to a larger heterogeneous sample. Fourth, in applying the lenses of dynamic capabilities and ambidexterity, this study enhances our understanding of how the Analyzer, as identified by Miles and Snow (1978) may be the more appropriate of the four strategic archetypes for an organization's survival and competitive advantage in the current economic environment. Finally, the three domain problems (entrepreneurial, engineering and administrative) identified by Miles and Snow (1978) are shown to align and interact in influencing and positioning an organization's strategic archetype.

The empirical analysis for this study, based on responses from 503 US-based organizations across multiple industries, provides support for most hypotheses. The composition of the sample, while somewhat biased toward smaller, privately held organizations, does provide for a fairly heterogeneous mixture of companies. As such, the findings from this study should be of relevance to a general constituency.

In general, the analysis demonstrates that Miles and Snow's (1978) typology still has relevance, and therefore has withstood the test of time. It should be noted however, that there are significant differences between the original work and the findings in this dissertation. Findings that do not lessen the importance of their research, but rather complement and extend it in meaningful ways.

The first sets of hypotheses, 1a through 3d, examine the various orientations or attributes of the organization as a predictor of the organization's strategic archetype. The specific attributes include an explorative and exploitative orientation, the proclivity towards radical or incremental innovation, and adaptability or alignment. The orthogonal nature of these attributes recognizes that each pair coexists simultaneously and in potentially differing degrees; an idea that is in alignment with both the concepts of dynamic capabilities and ambidexterity.

The orthogonal pairing of the attributes is, as noted, in keeping with what constitutes ambidexterity. Researchers and practitioners increasingly use the notion of ambidexterity to describe organizations that are capable of both exploitative and explorative behaviors and/or strategic acts (Simsek et al., (2009).

Considering the first pairing between the exploitative and explorative attributes, the current study shows that when both attributes exist in relatively high and equal amounts, in essence ambidextrous behavior, the organization is classified as being an Analyzer; a finding consistent with Miles and Snow's (1978) characterization of an Analyzer. Conversely, organizations where the same attributes exist in equal and relatively low amounts are classified as Reactors. Hence, the earlier 'different faces of the same coin' or Janus – affect postulate. The findings are also consistent with the pendulum analogy, whereby the pendulum firmly swings in the direction of exploration for the Prospector and for the Defender, the pendulum firmly swings toward exploitation.

The second pairing examines the organizations orientation towards innovation. Similar to hypotheses 1a-d, the results for hypotheses 2a-d reveal that those organizations pursuing both radical and incremental innovation at relatively high and equal levels are

identifiable as Analyzers. Again, the converse situation of a low orientation for both attributes results in an organization being identified as a Reactor. Those organizations with an emphasis on radical innovation identify as Prospectors while those orientated within the world of incremental innovation are Defenders.

The third, and final pairing, examines structure and culture along the attributes of alignment and adaptability. Alignment focuses on the organization's efforts to reduce uncertainty through cohesiveness of activities, competencies, and goals while adaptability helps the organization respond to changes in its environment and explore new opportunities (Gibson & Birkinshaw, (2004). In keeping with Brown and Eisenhardt (1997) and Tushman and O'Reilly (1996) Analyzers, once again, exhibited an ambidextrous propensity towards actively displaying high levels of both alignment and adaptability. When these attributes presented themselves on the low end, the Reactor was the strategic archetype most commonly identified. Finally, the Prospector was largely oriented towards adaptability while the Defender exhibited a high level of alignment.

The next set of hypotheses, 4a and 4b, examined consistency in problem domains and how that consistency, when it exists, affects the organization's financial performance. The results of hypothesis 4a divided the sample of organizations into one of two distinct groups – random and pure. Hypothesis 4b, extend the results of 4a by examining what effect, if any, consistency in the strategic archetype has on the organization's performance. Findings generally supported the hypothesis.

Organizations identified as pure did outperform their random counterparts in sales and market share. The lack of significance between the two groups on ROA and ROE is less a function of their specific differences and most likely a result of the current

economic environment. In response to the recession the U.S. government has enacted policies and taken actions (or not) that many feel have contributed to a general business climate rife with uncertainty. To a large extent, this has led to what the popular press has reported as “businesses and their capital sitting on the sidelines” rather than investing in expansion; with cash sitting at the highest level in over half a century ((Lahart).

Similarly, Fortune Magazine reported that “economic uncertainty, especially policy uncertainty, is greater than it has been...” and “business leaders were most uncertain about tax and regulatory issues: (Colvin). The culmination of these forces may account for the lack of between group differences for ROA and ROE given that there is very little return on money [assets] during this period.

Examination of strategic archetypes in the context of hypothesis 4c shows a preponderance of organizations classified as either Analyzers or Reactors. This finding suggests that there is value in possessing a mixed orientation (or moving toward a mixed orientation). This is not particularly surprising in light of not only current economic conditions, but also the present-day competitive environment exemplified by hypercompetition and great uncertainty. In fact, research may ultimately come to find that the Analyzer, and potentially the Reactor, are the odds on favorite for survival and sustained success.

The last set of hypotheses, 5a through d, take a look at one of the most enduring points of discussion in the management and strategy literature, the relationship between structure and strategy. Overlaying the strategic coalignment paradigm (Veliyath & Srinivasan, (1995) with the problem domains presented by Miles and Snow (1978) allows for an examination of the strategy-structure debate.

The entrepreneurial problem establishes how the organization interacts with the external environment (exploring new opportunities and/or exploiting existing capabilities and competencies). Findings clearly indicated the existence of a significant relationship between the organization's entrepreneurial domain and its strategic archetype. The engineering problem provides for the means by which the organization attempts to address the entrepreneurial problem (via radical innovative and/or incremental innovation). This study found that the engineering problem partially mediated the relationship between the entrepreneurial domain and strategic archetype thereby suggesting that while the engineering problem is important; its role is tempered by other factors.

Finally, the study considered the role, if any, that the administrative problem has on the interactions of either the relationship of the entrepreneurial problem on the organization's strategic archetype, or the relationship between the engineering problem and the strategic archetype. Hypothesis 5c and 5d seek to ascertain, to what extent if any, the influence of the administrative problem has on the organization's strategic archetype. The study failed to support the final interaction between the engineering problem and strategic archetype. This lack of support may be attributable to the fact that many of the sample organizations were Reactors, which as postulated previously, may be immature Analyzers. This may further be supported by the earlier discussion regarding the impact of dynamic capabilities, ambidexterity, and organizational vacillation. That as a result of these factors, with a particular eye towards vacillation, the administrative problem may not yet be fully formed, or may lag in its development, and therefore its impact. The large number of both Analyzers and Reactors in the sample, both posited as examples of

organizational vacillation, could account for the apparent lack of any observable significance within this hypothesis.

To better understand how the differences between studies support the continued relevance of their work, it is important to highlight key features delineating the two. The first difference between the Miles and Snow study and the current study was that their research was more qualitative in design, and entailed interviewing high level executives in each of the companies and corresponding industries they examined, e.g. text book publishers, hospitals, electron and food processing. Not only was their study more qualitative, it also comprised a total of 84 organizations, while this study, given its quantitative design, examined 503 organizations. Additionally, of the 84 organizations in the original studies, only 47 were actually classified into one of the four strategic archetypes, they elected not to classify the remaining 37 (see Table 22). In the current study, all organizations were subject to classification.

Table 22: Miles and Snow Original Distribution

	Text Book Publishers	Electronic Firms & Food Processors	Hospitals	Totals
# of firms in original study	16	49	19	84
# of firms actually used	5	24	19	48
Strategic Archetype Distribution				
Prospector	2	5	4	11
Analyzer	1	15	5	21
Defender	1	2	6	9
Reactor	1	2	4	7

A further potential confounding factor of their research was that each of the three studies was conducted by a different member of the team at a different point in time, often separated by months. Charles Snow examined the college textbook publishing

companies, Henry J. Coleman examined the food processing and electronics companies, and Alan D. Meyer examined the hospitals (2003).

The rationale they provided for only studying one industry, even though Coleman conducted two separate sets of the interviews was their belief that to study more than one simultaneously would confound management's perceptions to the objective measures of the environment. They posited that a sample including different types of organizations would result in contaminated measures and inaccurate interpretation of influences of both the environment and the organization. However, it was also their contention that it was necessary to examine industries that were undergoing some amount of market change because such change produced greater uncertainty, and as a result provided some diversity in managerial perception (Miles & Snow, 2003). In reality, it is possible that this design then limited the generalizability of their work. The current study as clearly detailed earlier, does not adopt a similar research design and thus, is expected to have greater external validity (i.e., generalizability).

Second and possibly foremost, Miles and Snow's (1978) study was conducted in a different economic and competitive environment. The general environment at the time of their study (mid to late 1970's) was one of arguably far less competition. Many industries, while not necessarily the ones that Miles and Snow (1978) examine, were oligarchical, and some were even monopolistic. The rate of change within and between industries and their constituents was far less frantic. The industrial base of the country, while beginning to change, was still very much rooted in manufacturing. Information technology and technology in general, was just beginning to have an impact on organizational functioning and performance. Globalization was in a very early stage of

development. In sum, competitive conditions were rather simplistic and easy to navigate compared to today.

The environment in which the current study was conducted is often characterized as hypercompetitive, an environment typified by intense and rapid competitive moves and great uncertainty; an environment in which competitors move quickly to build advantage and erode the advantages of rivals (D'Aveni, (1994 p. 217-218). It was Schumpeter (1934) who first hinted at the concept of hypercompetitiveness when discussing the concept of creative destruction. Specifically, destruction creates a disequilibrium in which most every organization is threatened with extinction as soon as it comes into existence. In a similar fashion, D'Aveni states, "instead of seeking a sustainable advantage, strategy in hypercompetitive environments now focuses on developing a set of temporary advantages" (D'Aveni, 1994 p. 7). Brown and Eisenhardt (1998) likewise argued organizations can only achieve success by maintaining a continuous stream of temporary advantages when the environment is continuously in motion.

It is in this environment of constant flux where not only do competitors and the relationships among them continually change, but the interactions between industries constantly evolve. The industrial base of the country has morphed from the production of hard goods, to one dominated by acquisition and dissemination of knowledge, services and technology. Globalization is the new norm with an economy of constant and unpredictable change (Ireland & Hitt, (2005), where more often than not changes are revolutionary as opposed to evolutionary. This type of environment not only increases uncertainty, ambiguity, and discontinuity, but also and as a result, requires that the

organization's strategic leadership increase the speed and adaptability of the decision making processes by which their strategies are formulated and implemented (Ireland & Hitt, 2005).

In addition to the aforementioned differences, this study was further impacted by the "Great Recession" that started in late 2007. This period in the country's economic history is, by many estimates, unprecedented. It has been accompanied by extreme uncertainty on the part of most business leaders. This uncertainty manifests itself in inaction and indecision. While it is not now known if the conditions brought on by the "Great Recession" represent a new normal, it is clear that it has brought about significant change in the overall environment. This change has potentially influenced the current study's findings.

These very changes in the economic and competitive environment support the use of the lenses of dynamic capabilities and ambidexterity to explain and predict an organization's ability to achieve a competitive advantage. Dynamic capabilities call for the development of flexible management capabilities as well as difficult to imitate combinations of organizational functional and technological skills (Teece et al., (1997). The idea that a competitive advantage requires the exploitation of both internal and external firm-specific capabilities as well as developing new ones is supported by Penrose (1959), Teece (1997), and Wernerfelt (1984).

Ambidexterity extends the dynamic capabilities postulate by recognizing the need to balance organizational activities between those that exploit existing capabilities and those that explore new and emerging ones (Tushman & O'Reilly, 1996). Similarly, an organization's ability to innovate and/or adapt existing innovations is a form of dynamic

capabilities (Helfat et al., (2007) (Tushman & Anderson, 1986) Tushman & Anderson, 1986), which can be considered a form of ambidexterity that creates a viable means by which a competitive advantage, be it sustained (Barney, (1989; 1991), Eisenhardt & Martin, (2000) or temporary (D'Aveni et al. (2010) is achieved.

In keeping with the above, one of the most significant findings in this study is the preponderance of both the Analyzer and Reactor archetypes. In fact, combined, they comprise 86% of the responding organizations, compared to 58% for Miles and Snow. The previous discussion regarding dynamic capabilities and ambidexterity, particularly as it relates to a hypercompetitive economic environment supports the efficacy of the Analyzer as the archetype best suited for survival in such an environment. Recall, an experienced Analyzer seeks to maximize potential profits while simultaneously seeking to minimize risk and they do this by combining the strengths of both the Prospector and the Defender (Miles & Snow, (1978). Stated differently, successful Analyzers have the paradoxical ability to simultaneously manage independent and complementary, yet contradictory demands as well as processes of exploration and exploitation (Andriopoulos & Lewis, 2009; Duncan, 1976; Smith & Lewis, 2011). While Miles and Snow (2003) used the term in a different context, I feel the successful analyzer exhibits Janus-like efforts of being able to simultaneously look in opposite, but complementary, directions.

While the Reactor is often viewed as inconsistent and unstable, Miles and Snow (1978), it is merely a less mature or stable form of the Analyzer. Like the Analyzer, they often seek to perform contradictory activities simultaneously. Their apparent disarray may be the result of their migrating between archetypes. The Reactor, even more than

the Analyzer, may represent the transitory phase between the other strategic archetypes, what is best known as organizational vacillation (Boumgarden et al., (2012).

When viewed in the context of hypercompetition, the findings of this study therefore reflect the current realities required for an organization to survive long term. The Analyzer and the Reactor strategic archetypes, by virtue of their more fluid orientation, are better suited to evolve and therefore survive (with notable performance differentials between the two). The Prospectors and Defenders, on the other hand, while viewed as more stable and therefore potentially more desirable, may in fact be organizations least destined for long term survival because of their apparent rigidity and even calcification.

CHAPTER 7: LIMITATION OF FINDINGS AND FUTURE RESEARCH OPPORTUNITIES

The current study is not without its limitations. First is the potential for common method bias associated with the use of single raters (respondents) from each of the participating organizations. Doty and Glick (Doty & Glick, 1998) point out that differences in the cognitive rating processes and perceptions among individuals impact their responses. The only means by which this source of common method bias can be overcome is by employing multiple raters. However, as Doty and Glick (1998) posit, common method bias does not necessarily imply that common method bias causes divergence between the observed and true relationships (p. 381).

Given the differences in design and context, it is for example, difficult to directly compare this study with Miles and Snow's (1978) original work. Granted, while it may be of interest to some, directly validating the original typologies was not the purpose of this study.

Another limitation of this study is the composition of the overall sample. The sample is comprised of mostly (but not entirely) smaller, privately held companies, and all were domestic, U.S. based companies. This composition does potentially impact the overall generalizability of the findings. It is only through future study that it will become

clear whether results do in fact (as assumed here) apply equally to larger organizations, foreign companies, and companies whose stock is traded on a recognized exchange.

A further limitation is the temporal nature of the study. This study is cross sectional and as a result, captures an organization's strategic archetype at a specific moment in time. To thoroughly understand the influential role of dynamic capabilities, ambidexterity and organizational vacillation, it will be important for future research to use a longitudinal design; one that captures the fluid rather than immutable nature of organizations.

The study could also be limited because of the economic and competitive context in which it occurred. One cannot but wonder what, if anything would change in the findings once a more stable environment is reestablished. For this reason it could provide an interesting basis for examining the impact of environmental uncertainty by redeploying the survey during a more stable time.

Aside from the future research that stems from the study's limitations, other areas for study present themselves upon reflection of what this study did and did not reveal. One area of inquiry is which of the following four identified attributes; exploration, exploitation, radical or incremental innovation, has the most significant impact upon organization performance. Does only one rise above the others, or is there some combination or configuration that proves more significant?

CHAPTER 8: CONCLUSION

This study sought to re-examine the validity of the Miles and Snow strategic typology 35 years after it was first published. The lenses of dynamic capabilities and ambidexterity were added in an attempt to extend the explanatory prowess of the typology. This unique perspective, the addition of these frameworks, helps transform the initial study so that current economic and competitive conditions can be factored in. The intent is to upgrade the basis of the original study so that it would account for the dynamics of the current environment. This modernized take then extends the applicability of the typology into the future.

Overall, the findings support the typologies validity in the 21st century. As such, it still has utility for both research and practice as a vehicle for describing and understanding the strategic orientation [archetype] of an organization. Also, this study demonstrates an increase in explanatory ability brought about by the inclusion and consideration of both dynamic capabilities and ambidexterity.

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APPENDIX

Survey Instrument

Survey Consent:

Thank you for your participation in this study. Your participation is completely voluntary. Refusal to participate involves no penalty or loss of benefits to which the participant is otherwise entitled and the participant may discontinue participation at any time without penalty or loss of benefits, to which the participant is otherwise entitled. In participating you will be assisting in research to better understand the dynamics of an organization's strategic intent and orientation. Your responses will remain completely confidential, and will only be analyzed in the aggregate for academic research purposes. In continuing this survey, you acknowledge that you are at least 18 years of age and wish to participate in this study conducted by Mr. Sollosy.

All data collected will be handled in an anonymous manner and Internet Protocol addresses will not be collected by the survey program. The information collected will be stored on a secure server and will be downloaded and removed shortly after data collection ends. There is no right or wrong answer and I have no particular interest in how a particular individual responds to these questions.

In this study you will be asked a series of questions about your knowledge and perceptions related to your organization's strategic orientation and the alignment of various management and operations activities. The final section includes questions that help clarify the industry type, size and other classification aspects of your organization. There is no more risk to you than expressing your opinions in everyday conversation. Your participation will benefit the field of Management, in general, and Strategy, specifically.

Research at Kennesaw State University that involves human participants is carried out under the oversight of an Institutional Review Board. This research has been approved by the Institutional Review Board at Kennesaw State University. Questions or problems regarding these activities should be addressed to the Institutional Review Board, Kennesaw State University, 1000 Chastain Road, #0112, Kennesaw, GA 30144-5591, (770) 797-2268

Thank you again for your participation. Should you have any questions and / or wish to review summary findings, please contact me at: (806) 622-8808.

By clicking YES below, you indicate that you agree to participate in this study. By clicking NO, you are free to exit the survey. In either regard, I sincerely thank you for your time.

Marc Sollosy,
Kennesaw State University

Q1: I have read the above statement and agree with the terms listed herein.

- Yes (1)
- No (2)

Please answer all questions from the perspective of the Business Unit, (i.e. division, etc.) or higher (the Company as a whole), NOT from a departmental level. Thank you.

Q2: What is your position in the organization?

- Executive Level (e.g., Chairman, President, Chief Executive Officer, Chief Financial Officer, Chief Operating Officer, Chief Administrative Officer, Chief Marketing Officer, Chief Information Officer, and Chief Technology Officer)
- Senior Management (e.g., Vice President, General Manager, Director, etc).
- Department or Group Manager
- Other

Q3: Do you have meaningful involvement in the development of your organization's strategy making activities?

- Yes
- No

Please indicate the description that best describes your organization. Please answers all questions from the perspective of the Business Unit or higher, not from the Department or lower level. Thank you for your cooperation in this matter.

Q4: In comparison to our competitors, the products and services we provide to our customers are best described as:

- More innovative and continually changing.
- Fairly stable in certain markets while innovative in other markets.
- Stable and consistently defined throughout the market.
- In a state of transition, and largely respond to opportunities and threats in the marketplace.

Q5: In contrast to our competitors, our image in the marketplace is that we:

- Offer fewer selected products which are high in quality.
- Adopt new ideas and innovations, but only after careful analysis.
- React to opportunities or threats in the marketplace to maintain or enhance our position.
- Have a reputation for being innovative and creative.

Q6: The amount of time our organization spends monitoring changes and trends in the marketplace can best be described as:

- Lengthy: We are continuously monitoring the marketplace.
- Minimal: We really don't spend much time monitoring the marketplace.
- Average: We spend a reasonable amount of time monitoring the marketplace.
- Sporadic: We sometimes spend a great deal of time, and at other times spend little time monitoring the marketplace.

Q7: The increase or loss in demand for our products or services is primarily due to our practice of:

- Concentrating on more fully developing those markets which we currently serve.
- Responding to the pressures of the marketplace by taking few risks.
- Aggressively entering into new markets with new types of products or services.
- Assertively penetrating more deeply into markets we currently serve, while adopting new products or services after a very careful review of their potential.

Q8: One of the most important goals in our organization is our dedication and commitment to:

- Keep our costs under control.
- Analyze our costs and revenues carefully, to keep costs under control and selectively generate new products or services, or enter new markets.
- Ensure that the people have the resources and equipment required to develop new products, services or enter new markets.
- Make sure we guard against critical threats by taking any necessary action.

Q9: The competencies (skills) our management possesses can best be characterized as:

- Analytical: their skills enable them to both identify trends and then develop new products, services or markets.
- Specialized: their skills are concentrated into one, or a few, specific areas.
- Broad and entrepreneurial: their skills are diverse, flexible, and enabled to change to be creative.
- Fluid: their skills are related to the near term demands of the marketplace.

Q10: The one thing that protects us from our competitors is that we are able to:

- Carefully analyze emerging trends and adopt only those which have proven potential.
- Do a limited number of things exceptionally well.
- Respond to trends even though they may possess only moderate potential as they arise.
- Consistently develop new products and new markets.

Q11: Our management tends to concentrate on:

- Maintaining a secure financial condition through cost and quality control.
- Analyzing opportunities in the marketplace and selecting only those opportunities with proven potential, while protecting a secure financial position.
- Activities or business functions which most need attention given the opportunities or problems we confront.
- Developing new products or services and expanding into new markets or market segments.

Q12: We prepare for the future by identifying:

- The best possible solution to problems or challenges requiring immediate attention.
- Trends and opportunities which can result in the creation of product or service offerings that are new to the industry or reach new markets.
- Problems, which if solved, will maintain and then improve our current product or service offerings and market position.
- Trends in our industry that our competitors have proven possess long term potential, while solving problems related to our current product or service offerings and customer's needs.

Q13: Our organizational structure is:

- Functional in nature (i.e., organized by department - marketing, accounting, personnel, etc.).
- Product or market orientated.
- Primarily functional (departmental) in nature; however, a product, service or market orientated structure does exist in newer or larger product offering areas.
- Continually changing to enable us to meet opportunities and solve problems as they arise.

Q14: The procedures we use to evaluate performance are best described as:

- Decentralized and participatory; encouraging many organizational members to be involved.
- Heavily orientated towards those reporting requirements which demand immediate attention.
- Highly centralized and primarily the responsibility of senior management.
- Centralized in established product or service areas, and more participatory in new product or service areas.

Q15: Using the scale provided innovation in our organization:

	Definitely True 1					Definitely False 5
Introduce new generations of products, services or processes.	1	2	3	4		5
Extend the range of products, services or processes.	1	2	3	4		5
Expand or open new markets for its products, services or processes.	1	2	3	4		5
Enter into entirely new fields of products, services or processes.	1	2	3	4		5
Improve our existing products, services or processes.	1	2	3	4		5
Improve the flexibility of our existing products, services or processes.	1	2	3	4		5
Reduce the costs associated with our existing products, services or processes.	1	2	3	4		5
Enhance our position in our existing markets.	1	2	3	4		5

Q16: Using the scale provided, over the past three (3) years, our organization sought to:

	Strongly Disagree 1						Strongly Agree 7
Represents a major improvement over previous activities.	1	2	3	4	5	6	7
Represents a breakthrough over previous activities.	1	2	3	4	5	6	7
Leads to product or services processes that are difficult to replace with older product or service processes.	1	2	3	4	5	6	7
Represents a major advance in products, services, or processes.	1	2	3	4	5	6	7
Is built upon existing skills.	1	2	3	4	5	6	7
Is built upon existing experience.	1	2	3	4	5	6	7
Is built upon existing knowledge.	1	2	3	4	5	6	7
Leads to products, services or processes whose new features build upon existing products, services or processes.	1	2	3	4	5	6	7
Leads to products, services or processes whose dimensional changes extend from existing products, services or processes.	1	2	3	4	5	6	7
Leads to better products, services or processes because it improves upon existing products, services or processes.	1	2	3	4	5	6	7

Q17: Using the scale provided, please respond to the following as it best represents your organization:

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
The management systems work coherently to support the overall objectives of the organization.	1	2	3	4	5	6	7
The management systems cause to waste resources on unproductive activities.		2	3	4	5	6	7
The people often end up working at cross purposes because our management systems give them conflicting objectives.	1	2	3	4	5	6	7
The management systems encourage people to challenge outmoded traditions, practices and sacred cows.	1	2	3	4	5	6	7
The management systems are flexible enough to allow us to respond quickly to changes in our markets.	1	2	3	4	5	6	7
The management systems evolve rapidly in response to shifts in our business priorities.	1	2	3	4	5	6	7

Q18: How many people are employed full time (FTE's) in your organization?

- Less than 10
- 10 to 19
- 20 to 49
- 50 to 99
- 100 to 499
- 500 to 999
- 1,000 to 4,999
- 5,000 to 9,999
- 10,000 and more

Q19: What year was your organization founded?

- (choices on a drop down menu in a range from pre 1912 to 2012)

Q20: What is your organization's primary business activity? (This is based upon the 2012 NAICS codes. Select only one)

- 11 - Agriculture, Forestry, Fishing and Hunting
- 21 - Mining, Quarrying, and Oil and Gas Extraction
- 22 - Utilities
- 23 - Construction
- 31-33 - Manufacturing

- 42 - Wholesale Trade
- 44-45 - Retail Trade
- 48-49 - Transportation and Warehousing
- 51 - Information
- 52 - Financial and Insurance
- 53 - Real Estate and Rental and Leasing
- 54 - Professional, Scientific, and Technical Services
- 55 - Management of Companies and Enterprises
- 56 - Administrative and Support and Waste Management and Remediation Services
- 61 - Educational Services
- 62 - Health care and Social Services
- 71 - Arts, Entertainment, and Recreation
- 72 - Accommodation and Food Service
- 81 - Other Services (except Public Administration)
- 92 - Public Administration

Q21: How are the shares of the organizations held?

- Publicly traded on a recognized public exchange, i.e., NYSE, AMEX, etc.
- Privately held, shares are not traded on a recognized public exchange

Q22: Using the provided scale, rate your organization's performance over the last 36 months (3 years) in each of the indicated areas:

	Much Worse					Much Improved	
	1	2	3	4	5	6	7
Sales	1	2	3	4	5	6	7
Market Share		2	3	4	5	6	7
Return on Equity (ROE)	1	2	3	4	5	6	7
Return on Total Assets (ROA)	1	2	3	4	5	6	7

Q 23: From the list below, please indicate the state for the home or primary location of this organization.

- (Drop down selection option with Intentionally Left Blank as an option and all 50 states and the District of Columbus presented as a selection option)

Thank you for your participation in this study.