

**CAPABILITIES, CONFIGURATIONS, AND LEVERAGING STRATEGIES:  
AN INVESTIGATION OF THE LEVERAGING PROCESS OF  
RESOURCE ORCHESTRATION**

A Dissertation

by

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## **ABSTRACT**

Resource orchestration research has focused primarily on aspects associated with the structuring and bundling of resources to form capabilities. However, questions remain regarding the theoretical and empirical underpinnings of the leveraging process, particularly as it relates to the types of capabilities needed to form capability configurations that are coordinated and deployed. Further, principles of configuration theory have yet to be applied to the resource-based view of the firm. Herein, I propose a study to (1) conceptualize and operationalize specific firm-level capabilities, (2) draw upon configuration theory to explain how these capabilities are coordinated into capability configurations in preparation for the deployment of specific leveraging strategies, and (3) examine the relationship between leveraging strategy and firm performance. I propose a typology of capability configuration that varies in the type of capability configurations coordinated based on different alternatives of leveraging strategies. Using data from the National Basketball Association, I find that strategies mediate the relationship between capabilities and performance. This study utilizes the theoretical tenants of the resource-based view of the firm to extend our understanding of capabilities, capability configurations, and leveraging strategies.

## **DEDICATION**

To my wife, Chelsea Yara Boss, and my three children: David Spencer Boss, Jr.,  
Russel Wayne Boss, and Elizabeth Georgia Boss.

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## CHAPTER I

### INTRODUCTION

*Google spends time and energy on acquiring talent in order to compete with Apple. The talent is acquired, but it has yet to improve the bottom line and threaten Apple's market superiority (Jackson, 2011, 2012).*

*In 2003, the LA Lakers (NBA) sign superstars Karl Malone and Gary Payton to an already star-studded cast of Kobe Bryant and Shaquille O'Neal to win an NBA Championship. They lose to the Detroit Pistons in the NBA finals (DuPree, 2004).*

In each of these examples, the focal firm acquires resources for the purpose of creating a competitive advantage. However, despite their efforts, the organization fails to become the market leader. These examples illustrate that either their individual resources were not effectively bundled to form capabilities or that capabilities did not perform in concert to create the configurations necessary to deploy an effective leveraging strategy. As a result, the organizations were unable to improve their performance.

The resource-based view of the firm (RBV) remains influential as a theoretical lens for studying questions associated with strategic management. The RBV asserts that in order for a firm to develop and sustain a competitive advantage, it must possess resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). A competitive advantage occurs when a firm “implements a strategy that creates superior

value for customers and that its competitors are unable to duplicate or find too costly to imitate” (Hitt, Ireland, & Hoskisson, 2013: 3). In addition, value can be measured by firm performance characteristics (Adner & Kapoor, 2010; Drnevich & Kriauciunas, 2011). Therefore, performance is one indicator of competitive advantage (Porter, 1985).

One focus that attracts significant attention is Sirmon, Hitt, and Ireland’s (2007) work extending the resource-based view. Sirmon et al. (2007) argue that a firm’s resource portfolio is managed through the processes of structuring, bundling, and leveraging in order to implement strategy, create value for stakeholders, and improve performance. These arguments suggest that holding valuable, rare, inimitable, and non-substitutable resources is necessary but not sufficient, and that resources must be managed and used in effective ways to form capabilities and core competencies as a path to implementing the firm’s strategy, improving its performance and developing competitive advantages.

Since publication of this work in 2007, several empirical studies addressing aspects of structuring and bundling of resources into capabilities have been completed (Mihalache, Jansen, Van Den Bosch, & Volberda, 2012; Ndofor, Sirmon, & He, 2011; Sirmon, Gove, & Hitt, 2008; Sirmon & Hitt, 2009; Sirmon, Hitt, Arregle, & Campbell, 2010). These studies extended theory and provided empirical richness to the foundations of the first two processes of resource orchestration. However, relatively few studies to date have examined firms’ abilities to effectively leverage capabilities to improve performance.

The leveraging process is composed of three subprocesses: mobilizing, coordinating, and deploying. After resources are bundled to create capabilities, those capabilities are mobilized to prepare for deployment. Once mobilized, the capabilities are coordinated into capability configurations and those configurations are then exploited to deploy a leveraging strategy (e.g., resource advantage, market opportunity, and entrepreneurial strategies) (Sirmon, Hitt, Ireland, & Gilbert, 2011). And yet, despite the importance of these subprocesses, a great deal remains to be learned about how the subprocesses theoretically connect firm resources to rent generation—particularly as it relates to capabilities and their coordination into configurations. Indeed, resource orchestration research has yet to address these elements.

In this work, I propose to theoretically and empirically examine three research questions. First, what are specific firm-level capabilities and how are they operationalized? In general, firm-level capabilities are defined as the firm’s ability “to perform a coordinated set of tasks utilizing organizational resources” (Helfat & Peteraf, 2003: 999). These firm capabilities are formed when human capital (managers) aggregates organizational resources for specific purposes (bundling) (Ireland, Hitt, & Vaidyanath, 2002; Sirmon et al., 2007). However, little is known as to the specific types of capabilities that managers should generate in order to create value and improve performance. Herein, I introduce four types of capabilities formed through the bundling process and that are essential for creating capability configurations. These are functional, structural, adaptive, and developmental capabilities.

Second, how does a firm coordinate these capabilities into capability configurations in preparation for the deployment of specific leveraging strategies and improve performance? Miller (1996) contends that configurations are qualities or properties that vary among organizations. Configuration, therefore, “can be defined as the degree to which an organization’s elements are orchestrated and connected by a single theme” (Miller, 1996: 509). Some argue that configurations are the best sources for developing a competitive advantage, and that without them, decisions, resources, and capabilities exhibit no pattern, coherence, or consistency over time (Inkpen & Choudhury, 1995; Khandwalla, 1973; Miller, 1996). Indeed, configuration theory argues that configurations are the essence of strategy (Miller, 1981). Herein, I draw upon configuration theory to examine how firms coordinate capabilities in concert to form the idiosyncratic configurations necessary for deploying leveraging strategies and improving performance. Three specific capability configurations are introduced: maintaining, extending, and transforming capability configurations.

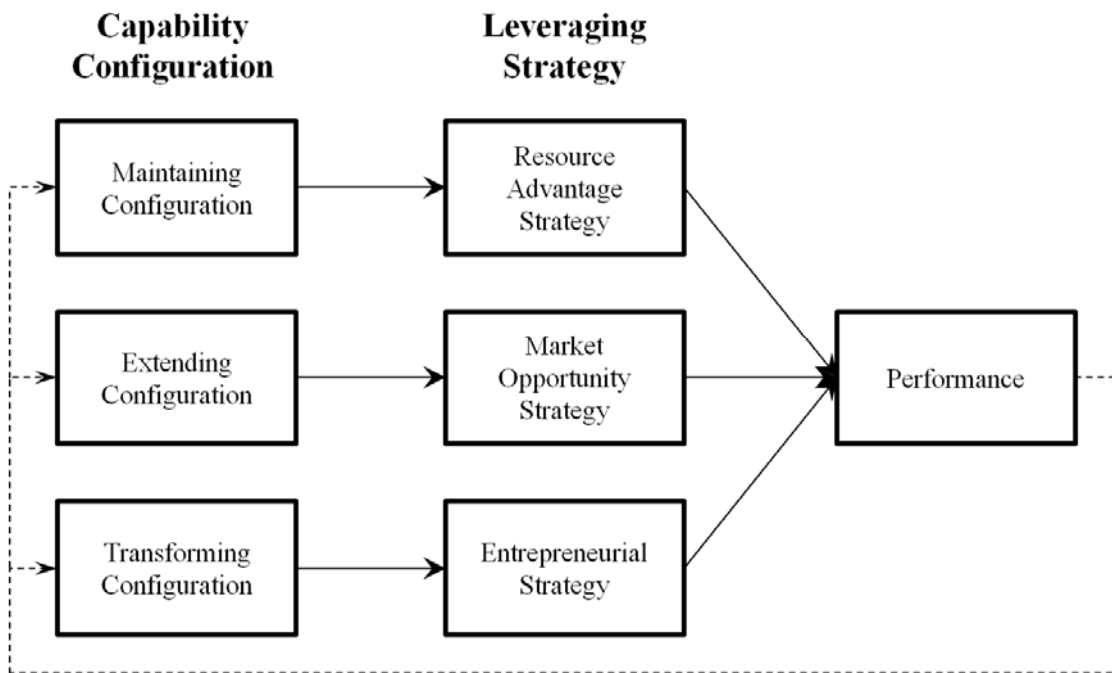
Third, which capability configurations are essential for deploying a specific leveraging strategy to improve firm performance? The exploitation of capability configurations facilitates successful strategy deployment (Sirmon et al., 2011). Thus, it is essential to investigate if leveraging strategy mediates the relationship between capability configuration and performance (Miller, 2011). I argue that strategies mediate the relationship between configurations and performance.<sup>1</sup> The increase (or decrease) in

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<sup>1</sup> The environmental contexts in which firms operate are assumed to be dynamic since the purposes of capabilities configurations are to facilitate strategies to improve performance relative to competitors (Young, Smith, & Grimm, 1996). This focus is also consistent with Sirmon et al.’s (2007) environmental context.

performance creates a feedback loop that affects the firms types of configurations and strategies. These hypothesized relationships are illustrated in **FIGURE 1**.<sup>2</sup>

**FIGURE 1: A Model of Firm Performance: Capability Configuration and Leveraging Strategy**



By addressing these three research questions, I focus specifically on bundled capabilities, on the process of capability configuration, and on the relationship between

<sup>2</sup> For the purposes of this study, theoretical arguments pertaining to resources, capabilities, configurations, and strategies focus on the core-business level of the firm as opposed to the organizational level of the firm. The core business level focuses on the major revenue generators for the firm (Hambrick & Mason, 1984). The organizational level incorporates both the firm’s core-business and other organizational-level constructs (e.g., ownership and corporate governance, financial structure, and marketing) (Hitt et al., 2013).

configuration and leveraging strategy necessary for improved performance. To illustrate these important relationships, I propose a typology of capability configuration that varies in the type of capability configurations coordinated based on different alternatives of leveraging strategies and firms' market position. I then predict how the categories differ from each other in terms of performance outcomes, and I offer several illustrations.

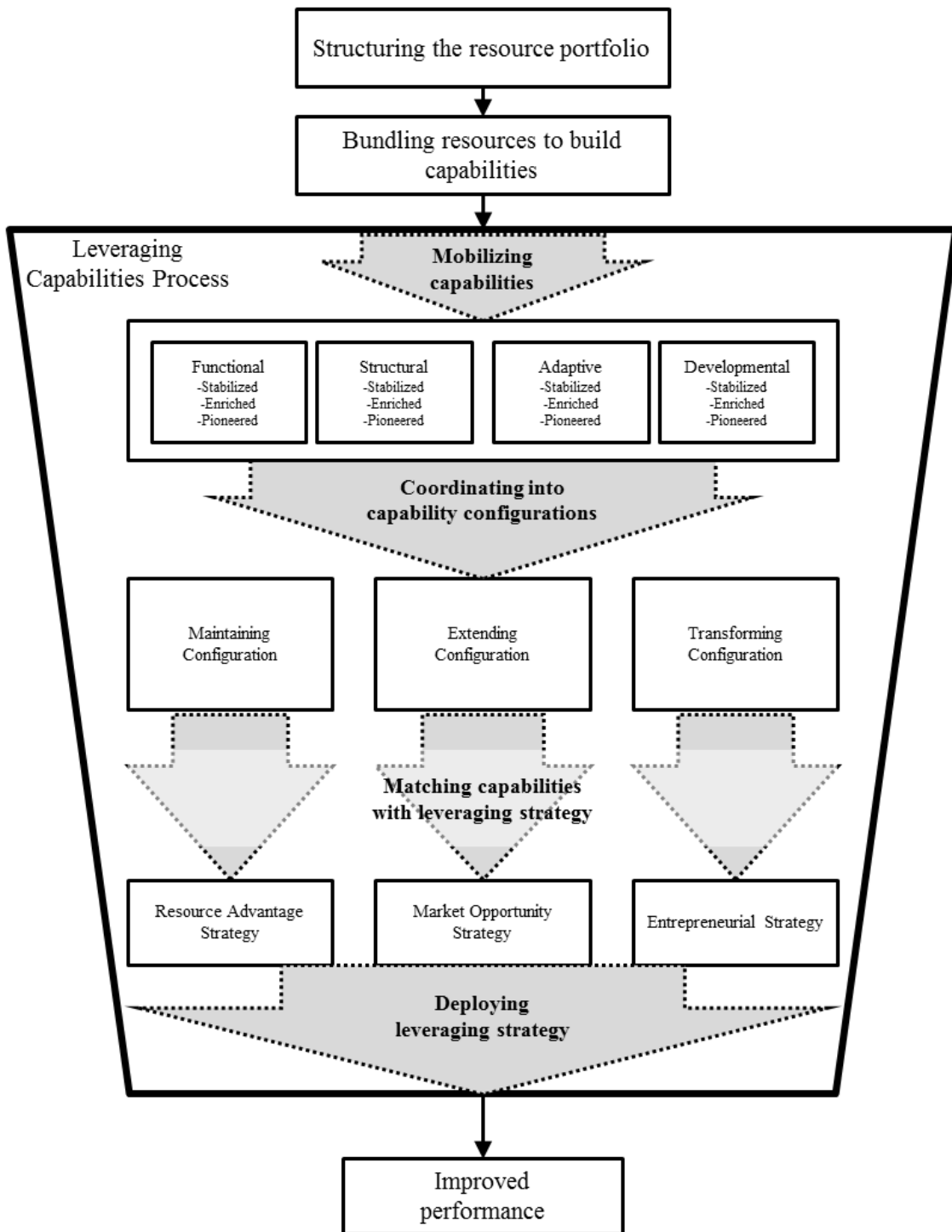
By focusing on capabilities and their role in the leveraging process of resource orchestration, I hope to enhance knowledge about the RBV and contribute to research on its efficacy. Indeed, Priem and Butler (2001b) argued that previous work on the RBV does not provide information on how resources are used to create a competitive advantage. Additionally, Barney and Arkan (2001) suggested that past research on the RBV assumed that the actions necessary to exploit resources are self-evident when they are not. Further, Sirmon et al. (2007) did not fully articulate types of capabilities needed to leverage strategies. Instead, they shift from idiosyncratic capabilities to capability configurations sharing little as to the types of capabilities necessary to appropriately mobilize, coordinate, and deploy a leveraging strategy. Therefore, I integrate new knowledge into the leveraging process of the resource orchestration framework that includes a broad characterization of my hypothesized model and demonstrates the leveraging process in terms of configurations, strategies, and performance. **FIGURE 2** provides an overview of the modified framework.

In the next chapter, I theoretically analyze the RBV and resource orchestration and discuss the structuring and bundling of resources. Then, I propose four specific capabilities—functional, structural, adaptive, and developmental—that are modified,

enhanced, and created through the bundling process. Thereafter, I draw upon configuration theory to describe how capabilities are coordinated into idiosyncratic configurations and hypothesize their relationships with leveraging strategies and performance.

In chapters three and four, I present the methods and the results of the hypotheses tests. In chapter five, I discuss the findings, emphasizing contributions as well as the study's limitations and future research possibilities.

**FIGURE 2: An Extension of Resource Orchestration: The Leveraging Capabilities Process \***



\*Note: environment is assumed to be dynamic



## CHAPTER II

### THEORETICAL DEVELOPMENT GROUNDED IN LITERATURE REVIEW

#### Resource Management Process

According to the RBV, resources are defined generally as “anything which could be thought of as a strength or weakness of a given firm” (Wernerfelt, 1984: 172) and all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable “the firm to conceive of and implement strategies that improve its efficiency and effectiveness” (Barney, 1991: 102). As these definitions indicate, the RBV recognizes various types of resources as important to firms—assets, capabilities, processes, and the like—and that these resources are foundations for developing a competitive advantage. Hitt, Ireland, and Hoskisson state that “a firm has a competitive advantage when it implements a strategy that creates superior value for customers and that its competitors are unable to duplicate or find too costly to imitate” (2013: 3). Value can be measured by a product’s performance characteristics and by its attributes for which customers are willing to pay. Firms create value by innovatively bundling and leveraging their resources to form capabilities and core competencies (Danneels, 2007; Sirmon et al., 2008). Two levels of value exist: value for customers and value for stakeholders. Further, value can be measured by a firm’s performance. For the purposes of this work, I apply value as specific to the firm’s performance: it is measured by a firm’s performance characteristics and by the dividends that the performance gives back to the firm and its stakeholders (Adner & Kapoor, 2010;

Drnevich & Kriauciunas, 2011).<sup>3</sup> A competitive advantage is sustainable to the extent that it exists over time and the advantage has not been neutralized through imitation of the underlying resources (Pacheco-de-Almeida & Zemsky, 2007).

The RBV states that a firm is able to develop and sustain a competitive advantage only when its resources are valuable, rare, inimitable, and nonsubstitutable (VRIN) (Barney, 1991). The firm's resources must be valuable, in the sense that they exploit opportunities and/or neutralize threats in a firm's environment (Makri, Hitt, & Lane, 2010). In addition, they must be rare and difficult to identify by a firm's current and potential competitors. Resources that are valuable but common are sources of competitive parity (Gu & Lu, 2011; Zahra, 2008). Resources must also be imperfectly imitable, meaning that they are derived from unique historical conditions, the causal link between the resources and the firm's sustained competitive advantage is ambiguous, and/or the resources are based upon complex social phenomena (Coen & Maritan, 2011). Finally, the resources cannot have strategically equivalent substitutes that are valuable but neither rare nor imperfectly imitable (Barney, 1991).

Empirical work supports the importance of these resource characteristics for firm performance. Crook, Ketchen, Combs, and Todd (2008) completed a meta-analysis of 125 studies pertaining to the RBV that encompassed over 29,000 organizations and offered data on the performance implications of one or more resources that were considered to be strategic. They found that when resources meet the criteria laid out in the RBV, 22 percent of the utility available from predicting performance differences

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<sup>3</sup> For the purpose of this work, I use performance as an indicator of competitive advantage (Porter, 1985).

across organizations is provided by firm resources. They concluded that “the identification, development, and distribution of value from strategic resources should be a primary consideration for scholars, managers, and shareholders” (Crook et al., 2008: 1141). In addition, Newbert (2008) conducted a study to test the RBV’s assumptions that valuable and rare resources contribute to the firm’s competitive advantage. The 664 micro- and nanotechnology firms examined showed that “value and rareness are related to competitive advantage, that competitive advantage is related to performance, and that competitive advantage mediates the rareness-performance relationship.”

However, merely possessing resources does not guarantee the development of competitive advantages or the creation of value (Barney & Arikan, 2001; Priem & Butler, 2001a), and scholars have criticized the RBV for this deficit. Priem and Butler (2001a) assert that the RBV is not a theory of the firm. From their perspective, in order to be a theory of the firm, the RBV needs generalized conditionals<sup>4</sup>, empirical content and nomic necessity (which describes situations that must always occur). While the RBV does have generalized conditionals, Priem and Butler (2001a) indicate that the empirical content and nomic necessity are absent. Kraaijenbrink, Spender, and Groen (2010) also assert while they agree that the RBV is not a theory of the firm, they do claim that it fits as a theory of rents and sustained competitive advantage. Indeed, the RBV theorists maintain it is not a putative theory of the firm and that they had no intention of explaining the existence or boundaries of firms (Barney, 2005; Barney & Clark, 2007;

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<sup>4</sup> Priem and Butler (2001) states that “generalized conditionals are ‘if/then’ statements. The RBV clearly contains such statements: Proponents of the RBV assert that if a firm attribute is rare and valuable, then that attribute is a resource that can give the firm competitive advantage.”

Peteraf & Barney, 2003). Since transaction costs economics (TCE) addresses boundary questions directly, Kraaijenbrink et al. (2010) see the RBV as more of a complement to TCE (Barney, 1999; Gibbons, 2005).

Other criticisms of the RBV have also been advanced. First, scholars argue that the VRIN is neither necessary nor sufficient for sustaining a competitive advantage. Kraaijenbrink et al. (2010) argue that a firm may have the resources, but these may not be sufficient or necessary because the firm doesn't know how to deploy them. Further, evidence suggests that the RBV does not sufficiently consider the synergy within resource bundles as a source of a sustained competitive advantage (Grant, 1996; Kor & Leblebici, 2005; Penrose, 1959).

Second, scholars argue that the value of a resource is too indeterminate to provide for useful theory. In essence, questions remain regarding whom/what parties gauge the firm's value, and how that value is gauged (Bowman & Ambrosini, 2000). Indeed, difficulty arises with the ability to independently value each and every resource and capability. Kraaijenbrink et al. (2010) suggest that a more subjective and creative notion of value is needed.

Third, it has been argued that the definition of resource is unworkable. In essence, the definitions of resources are all inclusive, which moves it toward a tautology—not a theory (Priem & Butler, 2001b). Specifically, the RBV does not recognize differences between 'resources as inputs' and 'resources that enable the organization of such inputs', and there is no recognition of how different types of

resources may contribute to a sustained competitive advantage in a different manner Kraaijenbrink et al. (2010).

Fourth, Sirmon et al. (2007) also critique the RBV and argue that it fails to explain how managers transform resources to create value and a competitive advantage, presents a static view of a dynamic process, and fails to consider competitive environmental contingencies. As Barney and Arikan (2001) argue: “more work is needed before the full range of strategy implementation issues not included in the Barney (1991) paper are integrated with a resource-based theory of competitive advantage” (2001: 175). Further, empirical evidence suggests that “what a firm does with its resources is at least as important as which resources it possesses” (Hansen, Perry, & Reese, 2004: 1280). As such, the RBV requires additional specification and in-depth examination—both to respond to criticisms and to extend the theory’s potential for explaining differentials among firms’ outcomes (Kraaijenbrink et al., 2010).

Because the successful implementation of strategy helps a firm create value, scholars have begun to investigate how firms accumulate, combine, and exploit resources (Grant, 1991; Sirmon & Hitt, 2003; Sirmon et al., 2007; Sirmon et al., 2011). Sirmon et al. (2007) created a resource management framework that specifically addresses the managerial actions that should be taken in order for the firm to create value and sustain a competitive advantage. Simultaneously, Helfat et al. (2007) advanced a process called “asset orchestration,” which addresses management activities that are taken to develop fit among their resource-management focused decisions (Adner & Helfat, 2003). Using these similar frameworks, Sirmon et al. (2011) integrated resource

management and asset orchestration to derive the term “resource orchestration” which focuses on how managers develop a competitive advantage.

Resource orchestration (RO) is based on the assumption that resources alone do not benefit the firm. Instead, the decisions and actions regarding the uses of those resources have the potential to help a firm create value and a sustained competitive advantage. In order to accomplish this, the firm should structure its portfolio of resources, bundle resources to create capabilities, and leverage those capabilities in the marketplace to create value.

### **Structuring Resources**

Structuring resources is the process by which a firm obtains the resources it needs to bundle into capabilities that will be leveraged to create value. The structuring process involves acquiring, accumulating, and/or divesting resources. Acquiring refers to the firm’s efforts to obtain resources outside the firm in the strategic factor market. Neo-classical economics assumes that strategic factor markets are efficient, which makes it difficult to obtain valuable, rare, imitable, and nonsubstitutable resources from external sources (Barney, 1986). However, Denrell, Fang, and Winter (2003) state that especially in highly dynamic markets, strategic factor markets may have incomplete information pertaining to resources, which creates opportunities for arbitrage. Therefore, the resultant uncertainty requires the firm to acquire resources in order to develop and maintain a competitive advantage. Intangible resources have greater value in risky and uncertain environments because of the tacit and firm-specific knowledge that is very difficult to

transfer between firms. Tacit knowledge refers to “knowing how” to do something (Grant, 1996; Vischer, 2012), cannot be easily transferred (Teece, Pisano, & Shuen, 1997), and is often embedded in uncodified routines and therefore is revealed through its application (Grant, 1996; Kogut & Zander, 1992; Liebeskind, 1996). Tacit knowledge is also difficult to transfer among individuals and organizations, and the firm often must decentralize many decision rights in order to utilize it effectively (Becker, 1962, 1993; Jensen & Meckling, 1992; Von Krogh & Wallin, 2012). Likewise, articulable (or explicit) knowledge refers to “knowing about” something (Grant, 1996), knowing “what to do” (Vischer, 2012), and can be written and easily transferred between individuals and firms in the marketplace (Hitt, Bierman, Shimizu, & Kochhar, 2001; Liebeskind, 1996). This type of knowledge is inexpensive to transfer and can easily be replicated by multiple parties (Becker, 1962, 1993; Jensen & Meckling, 1992).

Accumulating refers to efforts to develop resources within the firm and is centrally associated with learning. As such, a firm should develop the talent of the human capital within the organization in order to increase tacit knowledge specific to the firm’s needs. The training and experience pertaining to firm physical resources and firm operations are ways to increase tacit knowledge within the firm. However, despite the firm’s efforts, it may still lack the needed tacit knowledge. Under these circumstances, strategic alliances between firms may provide the requisite knowledge to gain a resource advantage over competitors (Lane & Lubatkin, 1998). Strategic alliances can be especially valuable for learning new knowledge in environments of low munificence. By using alliances, the firm may have opportunities to develop tacit technical and

managerial knowledge through transfers from its partners, which is especially needed by emerging-market firms that generally operate in markets characterized by low munificence (Hitt, Dacin, Levitas, Arregle, & Borza, 2000).

Divesting refers to the firm's efforts to shed existing resources that have proven not to be helpful in creating value. Divesting activities include selling off specific assets, layoff of human capital, divesting certain non-core aspects of the business, and outsourcing business functions from the central firm. Because the firm has finite resources, divesting is a necessary option to consider while competing in the marketplace. Doing so shifts resources to more productive and/or valuable assets. However, the firm should be careful in its divesting decisions, and it should consider the environmental conditions of the marketplace. Divesting without full information may limit the firm from taking advantage of resources of which the firm is unaware—such as tacit knowledge—and may place the firm at a competitive disadvantage.

The process of structuring the firm's resources is important but insufficient for the firm to create a value. The establishment of a resource portfolio is the basis for then creating capabilities. Learned, Christensen, Andrews, and Guth (1969) state that “the capability of an organization is its demonstrated and potential ability to accomplish against the opposition of circumstance or competition, whatever it sets out to do. Every organization has actual and potential strengths and weaknesses; it is important to try to determine what they are and to distinguish one from the other.” Teece et al. (1997) state that “the term ‘capabilities’ emphasizes the key role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external



organizational skills, resources, and functional competences to match the requirements of a changing environment” (1997: 515). In essence, a capability is the ability “to perform a coordinated set of tasks utilizing organizational resources” (Helfat & Peteraf, 2003: 999). Therefore, the firm should have the ability to bundle resources into capabilities and then leverage them to create and appropriate value.

### **Bundling Resources to Create Capabilities**

Bundling is the process by which a firm integrates resources within its portfolio to create capabilities. Each capability, therefore, is a unique combination of resources that allows the firm to take action for creating value for the firm and its stakeholders. The term capability can also be referred to as a “bundle of resources” (Hitt et al., 2001; Ireland, Hitt, & Sirmon, 2003; Ireland et al., 2002; Kor & Leblebici, 2005; Sirmon et al., 2008; Sirmon et al., 2007; Sirmon et al., 2011).

The bundling process varies based upon an organization’s needs, and different bundling processes produce different capabilities. The firm may bundle a small amount of resources in order to create low-order capabilities needed for tasks requiring less complexity within the organization. Likewise, the firm may bundle many resources to create high-order capabilities for complex tasks that are intended to change the organization. Therefore, different bundling processes are needed for incremental and radical organizational change (Hamel & Prahalad, 1994). The three sub-processes of bundling are stabilizing, enriching, and pioneering (Sirmon et al., 2007).

Stabilizing refers to minor incremental changes to existing capabilities. The efforts for improvement are to “stabilize” the firm’s position in the competitive environment (Smith, Mitchell, & Summer, 1985). This process focuses on keeping skills up to date and may include annual training and development of current employees and refining directives of specific projects. Firms currently performing at a level ahead of competitors often use this approach to bundle resources. Capabilities changed through the stabilizing process are also referred to as stabilized capabilities. Nonetheless, firms often operate in dynamic competitive environments, and stabilizing is unlikely to sustain a competitive advantage. While it is important, stabilizing is a less effective way to create value for the firm and its stakeholders (Siggelkow, 2002; Sirmon et al., 2007; Sirmon et al., 2011).

The enriching process of bundling refers to extending and enhancing a current capability. Capabilities can be enriched by learning new skills that are necessary to enhance the current knowledge of employees (earning degrees and/or certificates) or by adding additional complementary resources to the existing resource portfolio. The firm may already possess these resources but has yet to combine them in unique ways or it may acquire the resources through mergers, acquisitions, or strategic alliances. For example, a technology firm might use an alliance with or acquisition of a diagnostic firm to enhance its ability to gather and analyze data. In essence, the enriching process focuses on creating synergies among complementary resources to enrich capabilities. Capabilities enhanced through the enriching process are also referred to as enriched capabilities. However, because enriching extends current capabilities, the likelihood of

imitation is higher than if the firm chooses to create new capabilities, which occurs with the process of pioneering.

Pioneering is the process of creating new capabilities for the firm. These capabilities may be created from existing resources or may require creating new resources (Ahuja & Lampert, 2001). Either way, in order to create these new capabilities, the pioneering process requires creativity and exploratory learning which stimulate the creation of new and novel capabilities (March, 1991). For instance, Hitt, Harrison, Ireland, and Best (1998) cited SmithKline's acquisition of Beckman instruments as an example of integrating new resources with existing ones to create new capabilities. Through this acquisition, Beckman used its existing drug research capabilities and combined them with new diagnostic technology capabilities to create a new capability in biomedical research. Therefore, while the pioneering bundling process may include the recombination of existing resources, it often involves the integration of new resources with existing ones to create new capabilities. In addition, a firm functioning in uncertain competitive environments should consider pioneering as a process of bundling in order to keep up with competitors. A firm should discover new capabilities quickly in order to stay ahead of rivals wanting to be the first to exploit opportunities. Capabilities formed through the pioneering process are also referred to as pioneered capabilities.

## **Capabilities Created by the Bundling Process**

Sirmon et al. (2007) introduce the three types of bundling processes used to improve and create capabilities and assert that those capabilities become unique and idiosyncratic to each organization. The types of capabilities that Sirmon et al. (2007) specify relate to general functional areas (marketing, R&D, engineering, etc.), which can be combined together in unique ways to create capability configurations for the company. However, while Sirmon et al. (2007) may have cited functional areas, they do not fully articulate other types of capabilities needed for mobilizing capability configurations for leveraging strategies. Instead, they shift from idiosyncratic capabilities to capability configurations sharing little as to the types of capabilities necessary to appropriately mobilize and design a leveraging strategy. For a firm to design (mobilize) a strategy, it must be able to clearly articulate its capabilities. Further, without clarity concerning firm-specific capabilities, a firm cannot coordinate appropriate capability configurations that can be deployed for the implementation of leveraging strategies to create a competitive advantage.

In this section, I identify and articulate the types of capabilities improved and created through the three bundling processes, and subsequently used in capability configurations. Doing so establishes a foundation for elaborating on how these capabilities are leveraged to create value for the firm and its stakeholders through the mobilization, coordination, and deployment sub-processes. Further, in order for capabilities to play a role in the formation of capability configurations, they may need to be stabilized, enriched, and pioneered (Sirmon et al., 2007). While the capabilities of an

organization are often idiosyncratic to its resources and environmental context, I identify four types of capabilities that require bundling processes of the firm's resource portfolio: functional, structural, adaptive, and developmental. These four capabilities are based on concepts commonly addressed in medical research. Studies explore the functions, structures, adaptations, and development of humans (Nanci, 2007) and animals (Menge, Gräfe, Lorenz-Meyer, & Riecken, 1975) as means to improve the regeneration and healing of the body due to injury and/or age (Carter & Beaupré, 2007).

These four concepts are at the core of understanding human structure and regeneration; thus, they also play an important role for understanding the functions and capabilities of a firm. The body must have appropriate functions, structures, adaptabilities, and development in order to perform. Likewise, the firm must also have these to be successful in the marketplace. Further, I argue that these four capabilities are the foundations for configurations necessary to the firm. I do so because these four different capabilities are likely to play some role in all configurations, and several capabilities might have almost equal impact on a few configurations. However, most often, a single dominant capability will underlie, organize, and engender a configuration. **TABLE 1** presents an overview of the four common capabilities.

Each capability formed through bundling is individually important; however, they are also interconnected with each other. This is necessary in order for them to be coordinated into capability configurations necessary to execute strategy and optimize performance. Thus, while each capability is important, the integration and balancing of them is essential. For example, as a technology firm creates a new unit focused on

service for its products (functional), it also may need to improve the structure of its project-based teams (structural), manage day-today changes in routines as they react to competitors (adaptive), and/or hire a new transformational leader who has the experience to install the new department (developmental). Similarly, as a pharmaceutical firm pioneers its structural capabilities to create, develop, and sell a new drug not previously on the market (structural), it is forecasting new frontiers and evolving its routines beyond what the current conditions require (adaptive), invests in its human capital by funding formal education (functional), and conducts regular team-building meetings to facilitate continued communication (developmental). In addition, when a new CEO is appointed to lead a firm in a new direction (developmental), the firm may encourage cyclical training activities in order for departments to stay up to date on changes to the firm (functional), refine the composition of project-based teams and/or governance structures (structural), and incrementally refine routines in order to anticipate and adjust to the specific style and directions of the new leader (adaptive). I now explain the types of capabilities in more detail and elucidate their various manifestations from the bundling processes.

**TABLE 1: Firm Capabilities**

Type of Capability	Definition	Manifestations		
		Stabilizing	Enriching	Pioneering
<b>Functional</b>	The ability to create and manage formal functions established to carry out specifically defined tasks	Requiring regular, cyclical education activities to continue with specifically defined tasks	Enhancing existing functional capabilities by expanding the firm's knowledge base and/or adding complementary resources to carry out specifically defined tasks (ex: funding further formal education of human capital)	Combining formal units together to form new units to carry out specifically defined tasks
<b>Structural</b>	The ability to effectively structure and allocate resources around tasks and activities	Incrementally refining project-based teams and/or governance structures to maintain a current structure	Adding new knowledge or resources to project-based teams and/or governance structure to enhance a current structure	Reframing and/or creating new project-based teams and/or governance structures to create a new structure
<b>Adaptive</b>	The ability to refine, enhance, and change routines and respond to the competitive environment	Incrementally refining existing routines to adjust to particular day-to-day situations in the existing competitive environment	Enhancing existing routines by adding current or acquiring new resources (through mergers, acquisitions, strategic alliances, etc.) to anticipate strategic actions from and develop responses to the existing competitive environment	Forming new routines by forecasting new frontiers to evolve beyond the status quo of the existing and future competitive environments
<b>Developmental</b>	The ability to train, manage, and make decisions pertaining to human capital within the organization	Incremental modifications to human capital training	Enhancing, adding to, or altering aspects of the management to effectively develop the human capital of the organization	Use creative and exploratory learning to stimulate the creation of new and novel human capital; often requires transformational leadership

## **Functional capabilities**

Functional capabilities pertain to the general tasks required of an organization. When Sirmon et al. (2007) refer to marketing, R&D, and/or engineering capabilities, they are addressing the functional roles of firms (or organizations). Functional capabilities are the “hard” skills and abilities that constitute experiential as well as tacit knowledge that pertain directly to the functional goals of an organization. Functional capabilities are based on historical training and experience. These types of firm capabilities are often clearly specified and easy to identify. For instance, an engineering department may be composed of individuals that studied engineering during formal education and/or developed experiential skills and knowledge pertaining to engineering.

For functional capabilities to play a role in forming capability configurations, they may need to be stabilized, enriched, and pioneered (Sirmon et al., 2007). The firm maintains efficient and effective functional capabilities by stabilizing them through minor incremental changes to carry out specifically defined tasks. For instance, in order for a technology firm to stay ahead of competitors in innovation, it would invest in and encourage regular, cyclical training and education activities in order for the engineering department to stay up to date on the latest technological tasks. Similarly, a law firm specializing in civil litigation should continue to stay educated on new civil developments and laws to maintain its expertise in litigation tasks.

For the firm to enrich its existing functional capabilities, it invests in expanding the firm’s knowledge base and/or adds complementary resources to improve its ability relative to being able to carry out specifically defined tasks. A technology firm may



invest in its human capital by funding further formal education in order to enhance its functional engineering capability. Likewise, a law firm specializing in civil disputes may enrich its functional capability by incorporating commercial liability lawyers in an effort to broaden and enhance the civil litigation services offered by the firm.

Pioneering is the process of creating new functional capabilities within the firm to carry out specifically defined tasks. Here, a firm may lack a unit needed to perform functions necessary to innovate and/or compete with industry rivals. It may also lack the human and physical resources necessary for competition, and therefore should add existing resources together to form these new units. For instance, a product-based technology firm may create a new department focused on product research by utilizing the capabilities of its marketing and engineering functions. Also, current events with legal implications pertaining to corporate fraud may warrant a civil-litigation law firm to create a new department formed by new corporate tax lawyers and associates.

### **Structural capabilities**

Structural capabilities pertain to the firm's ability to efficiently structure and allocate resources around tasks and activities (Burton-Jones & Burton-Jones, 2012; Miller, 1986). A structural capability is the firm's ability to constitute structures for different tasks in an efficient manner. For instance, one firm may be excellent at structuring project-based tasks by constructing a team from multiple departments and/or functions in order to manage a new product. Johnson & Johnson, for example, regularly forms teams from multiple departments to create, engineer, and sell a specific product (Johnson & Johnson, 2013; Karim & Mitchell, 2004). In addition, the firm's structural

capability may be manifested by its ability to develop the framework within which strategies can be implemented within an overall governance organization (Eisenhardt, Furr, & Bingham, 2010; Jarzabkowski, 2008; Kumar, Kant, & Amburgey, 2007). For example, General Electric has historically demonstrated its ability to organize and govern various aspects of the firm in order to improve performance. Structural capabilities also deal with the firm's ability to both allocate correct resources to its structure and establish the appropriate authority and responsibility at each level due (Burton-Jones & Burton-Jones, 2012; Hayek, 1945), which is what GE has done as it has diversified its products into 16 different industries (Loomis, 2011)..

Structural capabilities may need to be stabilized, enriched, and pioneered to play a role in forming capability configurations (Sirmon et al., 2007). The firm stabilizes its existing structural capabilities by incrementally refining its project-based teams and/or governance structures to maintain a current structure. For instance, a firm with a simple structure may have few rules employed to address problems (Miller, 1986). This firm's structural capabilities are stabilized by incrementally refining rules to handle difficulties in order for the firm to continue normal operations (Hitt et al., 2013). As another example, an established sports team already equipped with an efficient organizational structure may require incremental efforts to increase synchronization and communication among the individual members. Doing so would strengthen the structure already established.

The firm enriches its existing structural capabilities by adding new knowledge or resources to improve its project-based teams and/or governance structures to enhance a

current structure. Improved collaboration and communication result from these enhancements. For example, to enhance the skills already salient to the existing team, a sports organization may hire an assistant coach specializing in offensive strategies. Likewise, a technology-based firm may appoint a new project lead to organize and motivate an existing project-based team.

Finally, the firm pioneers new structural capabilities by reforming and/or creating new project-based teams and/or governance structures to create a new structure for the firm. For instance, a firm's structure may need to be overhauled from a simple structure to a functional structure due to coordination and control problems associated with growth. Another firm may need to change from a functional to a multidivisional structure. Even still, a large firm with many subsidiaries may need to enlarge the structure for one subsidiary and diminish the structure for another. For example, a large pharmaceutical firm may demonstrate its structural capability by re-combining internal and external human capital in order to create, develop, and sell a revolutionary new drug. Likewise, the top management team of a firm facing bankruptcy may completely restructure its organizational form in order to cut costs as part of an overall effort to reverse the firm's decline.

### **Adaptive capabilities**

Adaptive capabilities refer to the firm's ability to adjust and evolve routines to respond to a changing competitive environment. Indeed, one of the criticisms of the RBV is that it fails to consider competitive environmental contingencies (Sirmon et al., 2007). Adaptive capabilities are exhibited through a firm's ability to integrate new

knowledge (Sherer, 2012), cooperate with alliance partners (Makri et al., 2010), and exhibit flexibility (Lepak, Takeuchi, & Swart, 2012) as it proactively and reactively adjusts to changes in its competitive environment. Firms with adaptive capabilities are able to absorb and share appropriate knowledge with internal and external constituents (Boss, Connelly, Hoskisson, & Tihanyi, 2013; Cohen & Levinthal, 1990; Fox, 1983; Sherer, 2012; Szulanski, 1996) and utilize their social networks to anticipate and adjust to changes in the competitive environment (Burt, 1992, 2005). The firms also are able to maximize individual idiosyncratic skills, abilities, experience, and tenure to drive its collective constituents to a common goal (Jackson & Delehanty, 2013), and enable the firm to be effective as it deals with diverse and idiosyncratic situations (Ang & Inkpen, 2008; Ang & Van Dyne, 2008).

Adaptive capabilities also manifest themselves differently based on the bundling process chosen by the firm. The firm stabilizes its existing adaptive capabilities by incrementally refining existing routines in order to adjust to particular day-to-day situations in the current competitive environment. Financial firms actively trading in the stock market stabilize their adaptive capabilities as they make continual, incremental, day-to-day changes as they react to the increasing volatility of the global competitive economy. Similarly, a local tourist attraction may have to continually make incremental adjustments based on current local events and holidays as well as changes in physical climate in order to stay competitive.

The firm enriches its existing adaptive capabilities by enhancing existing routines (by adding current or acquiring new resources through mergers, acquisitions, strategic

alliances, etc.) to anticipate strategic actions from and develop responses to the existing competitive environment. After the Bulls were eliminated from the playoffs at the end of the 1995 NBA season, Phil Jackson noticed that the Chicago Bulls were lacking in their ability to switch and defend larger players or trap big centers like Shaquille O’Neal. The team was unable to anticipate and adapt to the larger players. As a result, Jackson’s vision shifted and realized that the team would be much more competitive by adapting their strategy to have larger players with longer wingspans play guard. Jackson said, “If it worked, it would make us more flexible, more explosive, and impossible to contain” (Jackson & Delehanty, 2013: 151). According to Jackson, this shift in vision was a key element for the historic 72-win team that won the NBA championship in 1996 (Jackson & Delehanty, 2013).

The firm pioneers new adaptive capabilities by forming new routines (by forecasting new frontiers) to evolve beyond the status quo of the existing and future competitive environment. While different capabilities may contribute to innovation, the adaptive capabilities are specific to the firm’s ability to cohesively maximize idiosyncratic resources within and without the firm for the purpose of extending the organization (i.e., increasing innovation, seeking new opportunities, and staying ahead of the competition) (Bughin, Byers, & Chui, 2011). For instance, Apple not only had the functional and structural capabilities to become the leader in the smart-phone and personal computer/tablet markets (Jones, 2013) since the beginning of the 21st century, but the firm also had the adaptive capabilities to form the routines necessary to identify a gap in the technology space, utilize their resources toward a collective goal, and absorb

and share the knowledge through appropriate routines. As a reaction to Apple's adaptive capabilities, Google created the routines necessary to quickly change its strategic focus from one innovation to another and evolve its product emphasis to match the needs of the changing marketplace. The firm advanced from a web-based to a product-based platform because it had the adaptive capabilities to drive its collective constituents toward a common goal (Google, 2013). Similarly, the Chicago Bulls coaching staff and players held the adaptive capabilities necessary to develop the routines necessary for combining their skills to create a new competitive environment to improve performance. When Phil Jackson became the coach of the Chicago Bulls in the late 1980s, he, with help from assistant coach Tex Winter, developed routines to utilize the new triangle offense to create increased complexity for competitors' defenses. These routines evolved the Chicago Bulls' offensive strategy and helped them win six championships in eight years. Further, the strategy revolutionized the nature of the game and multiple variations are used extensively throughout the NBA today (Jackson & Delehanty, 2013).

### **Developmental capabilities**

Developmental capabilities pertain to the firm's ability to train and manage human capital within its boundaries. Firm development in the 21st century greatly depends on "generating intangible assets (ideas, skills) rather than on stimulating investment in machinery and physical assets oriented to the production of tangible goods. This makes investment in human capabilities (which include what is traditionally known as 'human capital') more economically critical" (Evans, 2007: 2; Sen, 1999). Interest in human capital changed the way economists and others interpreted many

important economic, social, and policy issues. Research has addressed many of the particulars of human capital and its importance in improving firm performance and maintaining a competitive advantage. From an economic perspective, the term ‘capital’ is referred to as a factor of production that is produced by other inputs. According to neoclassical economists, these inputs include land and labor (Blair, 2012). Yet, not all labor can be considered equal. Indeed, human capital expands from “know-what” to “know-how” and “know-why” as individuals gain experience and education (Kraaijenbrink, 2012; Spender, 2012). Such knowledge gained from experience and education assists individuals self-organize, and the expansion of human ideas and human intentionality provides a basis for developing stronger human capital (Loasby, 2012).

Because firm resources are bundled by specific individuals idiosyncratic to the firm, human capital is an essential component of all capabilities (Barney, 1991; Barney & Arian, 2001; Barney & Clark, 2007; Hitt & Ireland, 2002; Hitt, Ireland, Sirmon, & Trahms, 2011; Ireland et al., 2003; Ireland et al., 2002; Sirmon et al., 2007). Therefore, a firm’s developmental capabilities emphasize leadership self-efficacy, accurate mental models of effective leadership across situations, and behavioral flexibility as key outcomes that organizations should possess (Ng, Van Dyne, & Ang, 2009). Indeed, developmental capabilities are the capacity of the firm to make difficult choices at critical strategic moments (Hambrick & Mason, 1984; Mahsud, Yukl, & Prussia, 2011; Sen, 1999). Because strategic leaders are usually those that are chosen to make difficult decisions, the developmental capabilities of the firm are dependent upon the skills of the individual leadership (Kotter, 2007). Thus, leaders of the firm should possess

motivation, initiative, experience, and decision-making skills that assist the firm in creating value for stakeholders and improving performance (Ulrich & Smallwood, 2007). Such leadership may be formal or informal. Formal leaders may hold established positions that carry with them authority to make decisions pertaining to the strategic actions of the firm. Informal leaders may be high performers and/or charismatic figures that influence other members of the organization. Both are important figures to consider when assessing the developmental capabilities of the firm. The important aspect of developmental capabilities is the role that leadership plays in guiding the firm.

Developmental capabilities are manifest differently based on the bundling process chosen by the firm. The firm stabilizes its existing developmental capabilities as the firm makes incremental modifications to management training and development. Training and development efforts focus on the organization activities to improve employee productivity and wellbeing (Harrison, 2005). For instance, a technology firm with a differentiated but efficient top management team may conduct regular team-building retreats to maintain the team's ability to motivate each other as well as lead the rest of the organization.

The firm enriches its existing developmental capabilities by enhancing, adding to, or altering aspects of management to more effectively develop the human capital of the organization. Formal and informal leaders establish key policies, strategies, goals, and accepted modes of behavior, and they recruit and promote managers who best conform to their values and expectations. A firm enriches its existing developmental capabilities when leaders reconfigure units by promoting and reassigning employed



human capital in order to generate the greatest productivity (Miller, 1987). For example, the firm may employ an innovative leader who lacks effective communication skills and, therefore, does an ineffective job with managing the human capital aspect of the firm's resource portfolio. Interpersonal training and coaching sessions with professional consultants may assist with enhancing the developmental capabilities of the innovative leader. Likewise, a firm with an informal performance leader in a small unit may transfer the leader to a larger unit in order for the performance leader to influence a greater number of individuals and improve firm performance.

As the firm pioneers new developmental capabilities, it should use exploratory learning to stimulate the creation of novel human capital (March, 1991). It often requires a transformational leader who has the experience to not only exploit old certainties (incremental changes, traditional "by the books" approach), but also the ability explore new possibilities to achieve more from the organization (radical changes, innovative approach). Phil Jackson became the coach of the Los Angeles Lakers basketball team in 1999 and taught the triangle offense to the existing team. Kobe Bryant, the young superstar guard, often disregarded the triangle offense in order to "go rogue," which annoyed his teammates. Kobe was infamous for being stubborn and sometimes was unwilling to learn, but had high potential to be both a formal and informal leader. In order to get the most productivity out of Bryant, Jackson created a new developmental capability that worked: direct criticisms in very public forums. During one film session, Jackson said, "Now I know why the guys don't like playing with you" (Jackson & Delehanty, 2013: 218). He also indicated, publically, to Bryant that if he didn't want to

share the ball with his teammates, Jackson would gladly work out a trade for him. The tactic worked, and Bryant soon thrived in the “unselfish” triangle system (Jackson & Delehanty, 2013).

### **Capabilities: An example**

To illustrate all of the capabilities discussed, I draw upon an example from the NBA. Specifically, I focus on the different types of stabilizing capabilities that were used by the Chicago Bulls after their historic 1995-1996 season. This example examines capabilities separately to illustrate the distinct capabilities of an organization. Later in this work, I will discuss the significance of capabilities working in concert to form capably configurations. Here, however, the purpose is to solidify understanding of capabilities.

After the 1995-96 season, the Bulls made minor adjustments to each of their four capabilities. Functional capabilities signify the firm’s ability to create and manage formal functions established to carry out specifically defined tasks. Stabilizing functional capabilities require regular, cyclical education activities to continue with specifically defined tasks. Between seasons, Chicago continued to train as it had always trained, but increased the length of the practices to improve the functional skills of the team as a whole. Structural capabilities refer to the firm’s ability to ability to effectively structure and allocate resources around tasks and activities. Structures are stabilized by incrementally refining project-based teams to maintain a current structure. In the NBA, project-based teams can refer to the team’s roster of players. Between the 1995-96 and 1996-97 seasons, Chicago made incremental changes to its lineup by adding five role

players (i.e., a player who comes off the bench with a special skill), and keeping all of the existing starters. This demonstrates a stabilized structural capability of the team. Adaptive capabilities refer to the firm's ability to refine, enhance, and change routines and respond to the competitive environment. Adaptive capabilities are stabilized by incrementally refining existing routines to adjust to particular day-to-day situations in the existing competitive environment. During the season, Chicago had a target on its back and teams did their best to be "physical, aggressive, and primed to fall you on every play as long as they could get away with it" (Jackson & Delehanty, 2013: 177). To counteract these actions, Chicago continued its focus becoming even more "free" and "open" by "stealing the ball, cutting off passing lanes, and pressuring ball handlers into making mistakes" (Jackson & Delehanty, 2013: 178). Developmental capabilities are the abilities to train, manage, and make decisions pertaining to human capital within the organization, and incremental modifications to human capital training demonstrate stabilized developmental training. During the next season, Chicago continued to participate in formal (i.e., team off-sites and limiting media and families at practices) and informal (i.e., organizing trips to keep Dennis Rodman out of trouble) events to motivate each other and focus on the task of winning an NBA championship (stabilizing developmental capabilities) (Jackson & Delehanty, 2013).

### **Leveraging Capabilities Process**

The process of leveraging capabilities is essential for creating value for the firm and its stakeholders (Ndofor et al., 2011). Merely owning resources and/or bundling

them to create capabilities is not sufficient unless the firm effectively uses (leverages) the capabilities in the marketplace (Lichtenstein & Brush, 2001). Effective leveraging involves a sequence of processes to exploit the firm's capabilities and take advantage of specific market opportunities. Sirmon et al. (2007) identified mobilizing, coordinating, and deploying as three distinct sub-processes of leveraging in order for firms to maximize potential from their capabilities. Through these three leveraging sub-process, firms recognize which capabilities are essential for specific strategies, they coordinate them to create capability configurations needed for the strategies, and then they deploy the leveraging strategies within the context of the industry environment.

While these three sub-processes are generally sequential in nature, each may rely upon another during the leveraging process. For instance, as a firm uses capability configurations to deploy leveraging strategies, it may need to coordinate the capabilities in an effective and efficient manner. Thus, while the sub-processes are presented and often followed in sequence, a firm may also use them simultaneously.

### **Mobilizing Capabilities**

Mobilizing is the process of preparing to combine firm capabilities into capability configurations. To mobilize capabilities, the firm should identify the specific capabilities needed in order to coordinate capability configurations and then use those configurations to implement the chosen leveraging strategies. Functional, structural, adaptive, and developmental capabilities articulated are identified and integrated into routines as the firm gains experience in the marketplace (Glynn, Milliken, & Lant,

1992). As firms mobilize capabilities, they should allow for continual adjustments throughout the process in order to facilitate use of the many and varied actions necessary to create value. By doing so, the firm will avoid path dependence that creates core rigidities and limits the firm's ability to engage in the leveraging strategies and service clients (Lei, Hitt, & Bettis, 1996).

While specific leveraging strategies are often idiosyncratic to the firm, Sirmon et al. (2007) identified three that are highly applicable and that require capability configurations. The three leveraging strategies are resource advantage strategy, market opportunity strategy, and entrepreneurial strategy.

The purpose of the *resource advantage strategy* is to leverage capability configurations into distinctive competencies, and thereby develop a fit between the firm and the market where the firm can gain or maintain an advantage over its competitors. "A distinctive competence provides value...that is superior to the value provided by competitors and, thus, leads to a competitive advantage" (Sirmon et al., 2007: 284). This strategy helps the firm maximize its capabilities in order to stay competitive in the marketplace, and is generally a short-term strategy. In 2004, Coca-Cola Co. held 60.9% market share in India (*The Economic Times*, 2005). In order to gain the most from its capabilities, Coca-Cola Co. employed the resource advantage strategy by providing existing products that were superior to competitors and making incremental changes to retain its market position.

The *market opportunity strategy* emphasizes the leveraging of capability configurations to seize market opportunities for exploitation. These market opportunities

are often identified within the competitive environment in which the firm operates. A firm generally identifies these market opportunities within existing or adjacent markets to the firm, but may also find new opportunities in outlying markets or industries. Because a market opportunity strategy focuses on identifying and exploiting new adjacent market opportunities, the strategy is more long-term than a resource advantage strategy (Sirmon et al., 2007). For example, to exploit new opportunities in with voice activated devices, Ford Motor company has begun equipping its existing product line of cars with new voice-activated apps, which allow developers to provide new and unique services to car owners (Ford Motor Company, 2013). Ford has leveraged its R&D capability to create a new service (voice activated apps) packaged with existing products (automobiles) to satisfy growing or evolving customer needs.

Finally, the *entrepreneurial strategy* emphasizes the leveraging of capability configurations to create new products and/or services in new markets. These products may create a new market and/or transform an existing market thereby rendering the previous market obsolete. For example, the emergence of tablets in the computers market threatens to severely damage and or destroy the need for laptop personal computers (Wall Street Journal, 2013).

Mobilizing capabilities in preparation for capability configuration is a necessary step in the leveraging process. Indeed, “capability configurations must then be implemented in appropriate ways to create value” (Sirmon et al., 2007: 285). The steps of coordinating and deploying capability configurations are essential for creating value for the firm and its stakeholders.

## **Coordinating into Capability Configurations**

Once the firm has mobilized its capabilities to correspond with a chosen leveraging strategy, it must coordinate them into capability configurations. The mobilization process of leveraging recognizes the functional abilities, the structural framework, the adaptive relational and managerial skills, as well as the developmental experience necessary to work with each facet of the organization to build internal social capital and coordinate effectively (Sirmon & Hitt, 2003). The coordination process, then, is the configuring of those capabilities into configurations that are creative, flexible, and idiosyncratic to the firm (Miller & Whitney, 1999; Sanchez, 1995).

Coordinating is the first step of implementing a leveraging strategy (Sirmon et al., 2007), and the goal of coordinating is to integrate the firm's capabilities in such a way that competitors are unable to observe or duplicate them (Chatzkel, 2002). The process of coordinating capabilities into configurations can be further understood through the theoretical grounding of configuration theory. Sirmon et al. (2007) described the coordinating aspect of the leveraging process, but they did not explain how capability configurations were developed. In this section, I discuss the theoretical underpinnings of configuration theory and then apply it to the process of coordinating capabilities into configurations. I present three specific types of capability configurations formed from functional, structural, adaptive, and developmental capabilities. While these capabilities may combine into configurations in other ways than those I discuss, the purpose of the discussion is not meant to be exhaustive, but is intended to show common alignments of configurations to be illustrative of important relationships. Their

predictive power relies on the fact that most alignments are unlikely while relatively few are far more common (Meyer, Tsui, & Hinings, 1993; Miller & Friesen, 1984).

### **Configuration theory**

The principles of configurations theory were identified in contrast to those of contingency theory. In general, the goals of contingency theory are to predict why organizations are able to cope effectively with different types of environments. Miller explained that, while this is the theory's essential aim, "it is often pursued ineffectively, mainly because of the narrow and simplified perspectives that are brought to bear" (1981: 2). He argues that organizations are complex entities and that the "partist approach, which studies a tightly circumscribed set of linear relationships, is inadequate" (1981: 2). Essentially, the use of contingency theory negatively influences researchers' predictive ability due to a failure to examine "rich and complex adaptive models and to discriminate among the different models that can arise in different contexts" (1981: 2).

In contrast, configuration theory examines the complex interaction of many variables as they interact over time. These variables are manifested by a stream of decisions and events. By seeking to distinguish one type of situation from another, scholars gain insights into the determinants and consequences of strategies. By so doing, configuration theory provides emergent predictive models unlike those of its contingency theory counterparts (Miller & Friesen, 1982).<sup>5</sup>

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<sup>5</sup> Meyer, Tsui, and Hinings characterize the differences between contingency theory and configuration theory by drawing upon the differences between Newtonian and chaos theories: "Our comparison of the assumptions underlying contingency and configurational theories can be likened to Prigogine and Stengers's (1984) distinction between the assumptions of Newtonian physics and those of emerging chaos theories. Like contingency theorists, those taking the Newtonian perspective envision a world where stability, order, uniformity, and equilibrium predominate. The important relationships are linear, wherein



Configuration research has been conducted by several scholars under numerous labels. These labels include typologies (Miles & Snow, 1978), gestalts (Miller, 1981), generic strategies (Porter, 1980), modes (Mintzberg, 1973), archetypes (Miller & Friesen, 1978), strategic groups (Porter, 1980), strategic scope groups (Houthoofd & Heene, 1997), competitive groups (Leask & Parker, 2007) and taxonomies (Hambrick & Mason, 1984). These classifications of organizations have played a significant role within management research.

Two resonant examples of configurational theories that have enjoyed widespread popularity are Mintzberg's (1973, 1983) theory of organizational structure and Miles and Snow's (1978) theory of strategy, structure, and process. Mintzberg's (1973, 1983) theory identifies five ideal types of organizations: simple structure, machine bureaucracy, professional bureaucracy, divisionalized form, and adhocracy. According to the author, an organization that approximates one of these ideal types is hypothesized to be more effective than other organizations, especially when its context fits the ideal type.

Miles and Snow (1978) created a typology of organizations and identify the configurations of contextual, structural, and strategic factors that maximize fit to create organizational effectiveness. This implicit theoretical assertion is common to many

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small causes have small effects. In contrast, the configurational approach shares chaos theory's acknowledgment of "disorder, instability, diversity, disequilibrium, nonlinear relationships (in which small inputs can trigger massive consequences), and temporality—a heightened sensitivity to the flows of time" (Prigogine & Stengers, 1984: xvi-xv). A central insight of chaos theory is that patterns lurk beneath systems' seemingly random behaviors. Chaos theorists call these patterns "strange attractors"; organizational theorists call them configurations" (1993: 1179).

typologies that identify a set of effective organizational types (e.g., Miles & Snow, 1978; Mintzberg, 1979; Weber, 1946).

Another configurational approach was set forth by Miller (1981), Miller (1986), and Miller and Friesen (Miller & Friesen, 1982, 1984). This research contended that a successful firm represented a richly described configuration and made it distinct among other firms. Strategy, structure, and culture embodied the purposes and goals of the firm configuration, and these aspects reflected its values and commitments. Miller (1986) introduced a typology of four specific organizations based off the configuration of firm strategy and structure: simple niche marketers, mechanistic cost leaders, innovating adhocracies, and divisionalized conglomerates. By identifying common configurations of strategy and structure and then exploring their internal complementarities, it was possible to go beyond the approach of ‘one variable at a time’ and identify central themes that orchestrate the alignment among numerous variables of strategy and structure.

The firm gains numerous benefits from having a high degree of configuration, one of which is synergy: organizational elements complement one another (Miller, 1993). Configurations make imitation difficult: complex complementarities in tight configurations are difficult for rivals to copy (Black & Boal, 1994; Lippman & Rumelt, 1982). The firm also gains clarity of direction and coordination: it works well together when all elements are committed to common visions of organization goals and strategies to achieve those goals (Whitney, 1996). The firm develops distinctive competences: focusing resources and efforts allows companies to perform better than rivals whose

efforts are spread more diffusely (Porter, 1985). Commitment improves: tight configuration may show that a firm has irreversibly committed its resources-giving it resolve, credibility, and first-mover momentum (Ghemawat, 1991). Finally, the firm experiences greater economic efficiency: coordination and cooperation are achieved via shared understandings, eliminating the need for costly bureaucratic controls (Whitney, 1996).

Nonetheless, too much configuration can be detrimental to the firm. Miller states, “Once an orchestrating theme takes hold, it can establish Darwinistic processes within an organization that [can] ‘select in’ congruent elements and expel all others” (1996: 510). As a result, processes may become more routinized, systems may become more targeted, and formalities may multiply to be more abundant. At this point, tight configurations could create a momentum that renders an organization more specialized and internally coherent (Miller, 1993). Ultimately, then, the highly configured firms may “become too simple—too dominated by a single world view, too monolithic, too driven by one theme or function” (1996: 510). As a result, these path dependences are likely to create core rigidities, severely limiting a firm’s ability to engage in effective strategy.

A recent review of configuration approaches (Short, Payne, & Ketchen, 2008) as well as a special research forum in *Academy of Management Journal* in 1993 indicate that configuration theory still has unrealized potential both at the industry level as well as the firm level. Nonetheless, most research pertaining to configuration theory still resides at the industry level focusing on comparisons between firms (Short et al., 2008). Indeed, Short et al. identified organizational configurations as “*groups of firms* sharing a

common profile of organizational characteristics” (2008: 224). However, Miller (1996) invited scholars to focus not only upon configuration theory at an industry level, but also on configurations as a quality or property that varies *within organizations*.

Despite this invitation in 1996, few articles have addressed configuration theory as it pertains to elements within the organization. The application of configuration theory to the RBV adds a richness and depth to both theories. This extension applies configuration theory within the firm and strengthens resource orchestration by illuminating the capability coordination process. Indeed, as Miller states, “Configuration, in this sense, can be defined as the degree to which an organization’s elements are orchestrated and connected” (1996: 509).

### **Configuration theory and capability coordination**

Firm success does not come from a single source. Instead, it comes from a combination of many. Organizations with an ability to coordinate capability configurations tend to demonstrate clearer strategies, focused efforts, better coordination, and higher complementarities among the resources of the organization (Miller, 1996). Therefore, distinctive competences emerge and strategic implementation is facilitated (Sirmon et al., 2007). Miller (1996) states that configurations tend to be far better sources of competitive advantage than any other single aspect of strategy, and Inkpen and Choudhury charge that a firm’s strategy is a product of a series of activities and decisions that “coalesce into a pattern and logic” (1995: 314). This implies that configurations are the essence of strategy. Further, Inkpen and Choudhury (1995) argue that if decisions, resources, and capabilities exhibit no pattern, coherence, or consistency

over time, then there is no strategy. Therefore, the identification and building of capability configurations and the application of them to strategies are “likely to be a more potent determinant of [the firm’s] effectiveness than any of [its] individual components” (Khandwalla, 1973: 493).

Capability configurations are made up of cohesive combinations of capabilities, the complexity of which makes them difficult to imitate (Miller, Eisenstat, & Foote, 2002). Further, capabilities must work in concert because of their interconnections (Miller, 2011). In order to coordinate capabilities, the firm must understand the value of individual capabilities and possess the ability to disseminate that knowledge throughout its internal network (Hamel & Prahalad, 1994; Hitt & Ireland, 2002).

Capability configurations are not built like physical structures—with rational, step-by-step blueprints. Instead, most capability configurations are coordinated from a blend of insight, inspiration, and trial and error (Miller & Friesen, 1984). Indeed, the formation of capability configurations begins with many possible starting points. Recognition of an unserved market need, an enhanced or new innovation, an important technology, a unique talent, and a novel administrative process are all examples of starting points for building configurations. Further, a configuration may emerge due to a crisis that creates problems and forces the pieces of a company to adjust to one another.

During the mobilizing phase of the leveraging process, different capabilities are considered and market strategies for deployment are chosen. These strategies depend upon a starting point around which the firm then builds a capability configuration. The starting point may be due to a physical, human, and/or intellectual change in the firm. A

capability is bundled around resources pertaining to the change, and other capabilities perform in concert as they are coordinated into capability configurations. Starting points may be manifest in any of the four capabilities—but in order for there to be a capability configuration necessary to successfully deploy a leveraging strategy, these capabilities must be interconnected. For example, in the middle of the 2011 football season, the Denver Broncos, a team in the National Football League (NFL), promoted an unconventional quarterback named Tim Tebow to lead their offense (Associated Press, 2011). This player had distinct functional skills different from other quarterbacks. Tebow’s promotion was the starting point for building a unique capability configuration. To support Tebow, Denver restructured its offense and became a “run-first” team in order to effectively allocate resources around his skills. More tight ends and running backs were factored into the offense to sustain a running attack. This restructuring necessitated the development and training of coaches and players to be able to make new decisions pertaining to the human capital available to the team. These changes to the functional, structural, and developmental capabilities had to be supported by forming new routines to evolve beyond the status quo of a “pass-first” NFL to be competitive in the marketplace. Only through coordinating these capabilities in concert (i.e., into configurations) was Denver able to win seven out of eight games to finish the season (Farmer, 2011).

Though capabilities may be combined into configurations in many different ways, I articulate three specific configurations that (1) show common alignments and illustrate important relationships, and (2) are each used to deploy a specific strategy. The

three specific capability configuration types are: maintaining, extending, and transforming. These configurations are also referred to as “types” because multiple idiosyncratic combinations of capabilities can be coordinated to form them. The configurations and descriptions of how they fit with the leveraging strategies of resource orchestration constitute a proposed typology of capability configuration (See **TABLE 2**).

This typology differentiates among types of configuration, strategies, and market position. It makes distinctions that will further theory and has implications for important organizational outcomes. The goal is to show how and why the attributes in each of their types interrelated the way they do. The advantage of creating a capability configuration typology is to (1) extend theory pertaining to resource orchestration and configuration theory, (2) invoke contrasts that facilitate empirical progress, and (3) utilize elements to describe each type and show how they cohere in thematic and interesting ways (Miller, 1996).

The discussions of these configurations and the specific hypothesized relationships between the elements of the typology are included in later discussions. Each of the hypotheses follows the proposed relationship model found in **FIGURE 1**.

### **Maintaining capability configuration**

“Maintaining” capability (MC) configurations are composed of existing capabilities that are coordinated to sustain a high level of performance. A firm coordinating this type of configuration seeks to “stay the course” and continue to utilize capabilities in a consistent manner that will help the firm sustain its momentum relative to performance (Pangarkar & Lie, 2004). A firm coordinates maintaining configurations

**TABLE 2: Capability Configuration Typology**

Configuration				Market Context			Leveraging Strategy
Type of Configurations	Tagline	Composition of configurations	Capability Configurations	Performance (relative to competitors)	2013: Basketball Examples	Practical Examples	Strategy Employed
<b>Maintaining configurations (MC)</b>	"Good direction, good velocity"  "stay the course"	All stabilized	F, S, A, and D all stabilized	<b>High performers</b>	Miami Heat	Microsoft	<b>Resource Advantage</b>
<b>Extending configurations (EC)</b>	"Good direction, increase velocity"  "catch up"	At least 1 pioneered	F - pioneered, SAD - enriched or stabilized S - pioneered, FAD - enriched or stabilized A - pioneered, FSD - enriched or stabilized D - pioneered, FSA - enriched or stabilized	<b>Adequate performers</b>	Oklahoma City Thunder	Lenovo	<b>Market Opportunity</b>
<b>Transforming configurations (TC)</b>	"first direction, then velocity"  "right the ship"  "full steam ahead"	All pioneered	F, S, A, and D all pioneered	<b>Declining performers (reactive)</b>  <b>High performers (proactive)</b>	Boston Celtics	Borders (declining)  Intel (high)	<b>Entrepreneurial</b>



to continue its competitive advantage and high performance. The firm essentially has an established system that has been effective, and it keeps up with changes in the marketplace (Eckhardt & Shane, 2011). In essence, the firm believes it has the correct direction and that it is traveling with the appropriate velocity (good direction and good velocity) in order to sustain its competitive advantage and performance.

Functional, structural, adaptive, and developmental capabilities of MC configurations are established capabilities that work in concert to help the firm continue to effectively utilize its existing competitive advantage to perform well in the marketplace (Miles, Snow, Meyer, & Coleman, 1978). In this case, extensive changes to capabilities are unnecessary to stay ahead of competitors. Instead, the firm must focus on making incremental changes to the functional, structural, adaptive, and developmental capabilities to maintain its emphasis on continually improving and strengthening its competitive advantage (Sirmon et al., 2007). An incremental refinement in a routine (stabilized adaptive), for example, will be followed by modifications to team-based training (stabilized developmental) and formal certification activities (stabilized functional), and the structure may need incremental refinement to handle the refined routines (stabilized structural). Therefore, maintaining capability configuration types are composed of stabilized capabilities (Sirmon et al., 2007). These capabilities must work in concert for the maintaining configuration to be effective (Miller, 1986). When these existing capabilities work in concert, they have a positive effect upon performance—regardless of the leveraging strategy deployed.

For example, in 2009, Microsoft (a market leader of PC software at the time) upgraded its operating system from Windows Vista to Windows 7 (stabilizing functional capabilities). Windows Vista was heavily criticized for its lack of security, bloated use of disk space and processing power, and higher hardware requirements—accompanied with dubious user-perceptible improvements (Kirk, 2007). The move to Windows 7 solved many of the problems, improved functionality, and made the interface easier to use (Ohlhorst, 2009). This move stabilized the firm’s functional capabilities of providing services to its users. In order to facilitate the changes, Microsoft kept knowledge and resources by retaining existing employees to stabilize its existing human capital, project-based teams, and governance structure (stabilizing structural capabilities). The firm refined routines in order to anticipate circumstances that would be affected by the change in operating systems (stabilizing adaptive capabilities), and it improved leadership decision-making in order to continue to effectively manage the firm’s new resource portfolio (stabilizing developmental capabilities) (Dignan, 2008). Here, Microsoft coordinated its capabilities into a MC configuration to preserve and maintain its market position. Because of these actions, “Windows 7 has been a quiet success, maybe even a phenomenon” (Bott, 2010) and Microsoft’s fourth-quarter revenue for 2010 increased 22% from the previous year.

As a firm strives to continue to effectively utilize its existing competitive advantage to perform well in the marketplace, it forms MC configurations composed of established functional, structural, adaptive, and developmental capabilities that work in

concert (Miller, 1986). When these capabilities work in concert, MC configurations will have a positive effect on firm performance. Stated formally:

Hypothesis 1a: Maintaining capability configurations are composed of stabilized capabilities that function in concert.

Hypothesis 1b: A maintaining capability configuration is positively related to firm performance.

**Deployment strategy: Resource advantage.** Despite the effect that carefully coordinated configurations have upon the firm's competitive advantage and performance, they are also interdependent with strategy. Given a particular strategy, there are a limited number of suitable configurations, and vice versa (Miller, 1986). Further, configurations can be better understood in relation with the strategy employed (Miller, 1996). Because the leveraging process begins with mobilizing bundled capabilities for the purpose of deploying an appropriate strategy, the next logical step is to coordinate the most effective configurations from those bundled capabilities in order to deploy the chosen strategy which will then improve performance. (As mentioned earlier, for the purpose of this work I use performance as an indicator of competitive advantage (Porter, 1985)). In essence, an appropriate strategy will mediate the relationship between the capability configuration and performance. These linkages between configurations and strategy are essential elements to understand if a firm wants to move in the same direction at the same pace. Indeed, the degree to which a configuration affects performance is mediated by the strategy deployed—and a strategy will largely be ineffective without a configuration of capabilities to deploy it (Miller & Whitney, 1999).

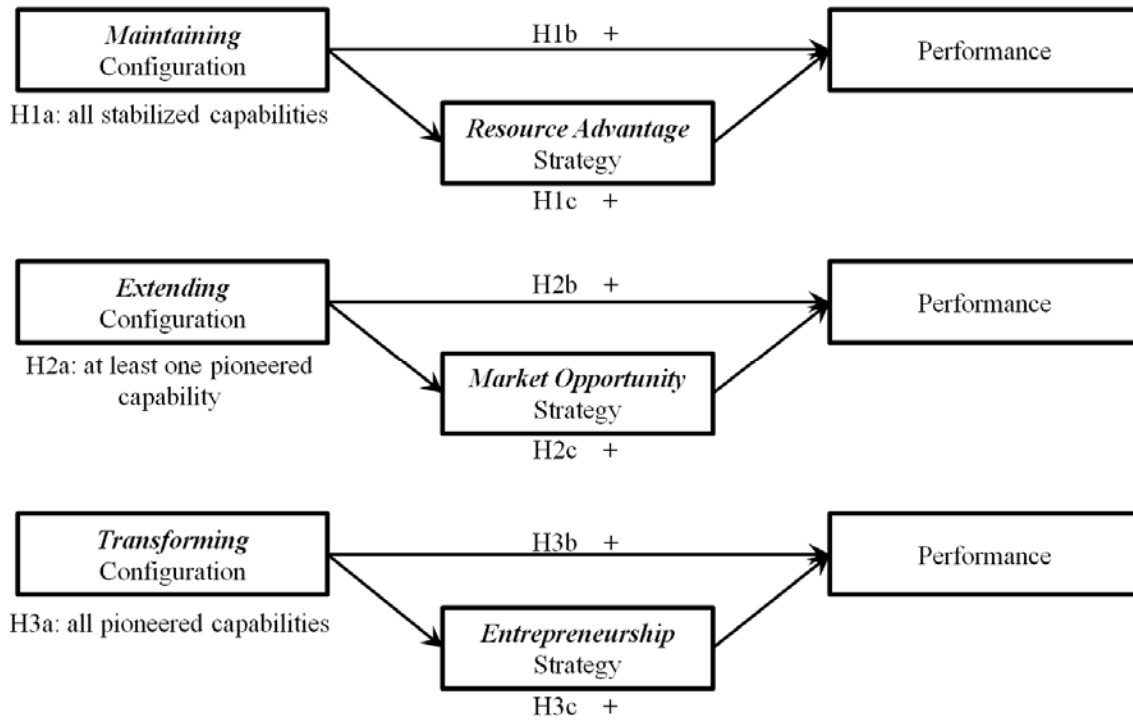
Sirmon and colleagues stated that the “intent of the resource advantage strategy is to leverage capability configurations” and those capability configurations “produce a distinctive competence” (2007: 284). A distinctive competence of MC configurations is composed of existing capabilities coordinated to maintain a high level of performance in the market where the firm competes. Thus, a strategy that “develop[s] a fit between the firm’s competencies and the market where it has an advantage over its competitors” (Sirmon et al., 2007: 284) should mediate the positive relationship between MC configurations and performance. Indeed, when a mediating relationship exists, performance improves (Miller, 1986; Rumelt, 1974).

On the contrary, if a firm were to coordinate extending or transforming configurations (explained hereafter) and deploy them to implement a resource advantage strategy, revenues may increase, but they would do so at the cost of too much reconfiguration, ultimately reducing the firm’s overall returns. The costs of enriching or creating new capabilities may far outweigh the benefits of a resource advantage strategy. As I discuss later, these types of configurations and their relationships with performance are mediated by different strategies in different contexts that would be more cost efficient and appropriate.

Nonetheless, because of the continuous and sometimes substantial change in a dynamic environment, the firm’s competence may not remain distinctive for long, and a resource advantage strategy should only be used to maintain a short-term advantage (Sirmon et al., 2008). These arguments lead to the following hypothesis (see **FIGURE 3** for all of the hypotheses):

Hypothesis 1c: The resource advantage strategy positively mediates the relationship between maintaining capability configurations and firm performance.

**FIGURE 3: Model Hypotheses**



### **Extending capability configuration**

A firm coordinating “extending” capability (EC) configurations seeks to “catch up” and make concerted efforts to develop a new capability that will help the firm improve performance in the marketplace. In essence, the firm seeks to extend its abilities by adding to the organization functionally, structurally, adaptively, or developmentally. The historical actions of the firm improved its competitive position, but more is needed for the firm to take a leap forward and compete against superior rivals. Therefore, a firm

coordinates EC configurations because it seeks to perform at a higher level and change certain aspects of the firm to do so. These changes are made to capitalize on recognized market imperfections and improve performance. In essence, the firm is pointed in the right direction, but more is needed to move forward (good direction, increase velocity).

EC configurations assist the firm in its efforts to perform at a higher level; thus, at least one functional, structural, adaptive, or developmental capability should be a pioneered capability. The logic of this conclusion is based upon the tenant that pioneered capabilities are unique because of the exploratory actions associated with them (March, 1991). A firm that seeks to improve will explore its market space searching for opportunities for new innovations and/or market imperfections (Ireland et al., 2003). Once those opportunities are recognized, the firm strives to create a new competitive advantage. A firm coordinating EC configurations seeks to innovate to an extent. This means that the costs associated with using only pioneered capabilities would be too much for the firm considering the fact that, while improvements are necessary to move forward, there is still much within the organization functioning well and keeping the company competitive. In this sense, the firm coordinating EC configurations uses at least one pioneered capability to concentrate on a specific aspect of the firm needing development. Here, a firm may seek process-innovation opportunities to increase its efficiency to take advantage of market imperfections (Boss, Withers, & Ireland, 2014; Ohlhorst, 2009). For these reasons, EC configurations require at least one pioneered capability to satisfy the firm's objectives.

However, an EC configuration cannot be formed with only one pioneered capability alone. As explained earlier, all four capabilities must work interdependently for a configuration to be built. Nonetheless, in order for pioneered capability to influence performance, enriched and/or stabilized capabilities should be coordinated with it to form EC configurations. This logic is consistent with Sirmon et al. (2007) who argue that capabilities may need to be enriched and others pioneered in order to compete in the marketplace. The logic is also consistent with Miller's (1986) argument that aspects of configurations must sufficiently support one another.

Therefore, when a firm changes by bundling a pioneered capability, other enriched or stabilized capabilities must change with it for the firm to successfully create EC configurations. As Miller and Friesen state, "the use of these devices must increase and decrease in concert" (1982: 871). Pioneered capabilities within EC configurations may be any one of the four capabilities. For example, a firm may create a new department (pioneered functional capability) within the organization to concentrate on exploiting a market imperfection. This pioneered functional capability is only the start for the creation of an EC configuration, and the other capabilities must be enhanced or stabilized simultaneously in order to support it. Existing routines should be enriched by adding current or acquiring new resources to anticipate strategic actions from and develop responses to the existing competitive environment (enriching adaptive capability). Further, the new department within the organization requires the firm to add new knowledge or resources to project-based teams and/or governance structures to enhance a current structure so that the functional department will have the support that it

needs to perform its tasks (enriching structural capability). In addition, human capital will also need to be enriched by adding and training new talent necessary to perform the functions of the job correctly (enriching developmental capability). As of May 2014, Lenovo had “outperformed Hewlett-Packard, and is edging closer to rivals Apple, IBM, and Samsung” (Dion, 2014). Perhaps one reason is due to its creation of a new department within the firm to overhaul its famous ThinkPad keyboard (Mossberg, 2014). In this case, Lenovo will have formed an EC configuration if it also enriched existing routines, redefined structures, and added new talent necessary to support the new department.

In summary, as a response to a pioneered capability created to assist the firm improve its performance in the marketplace, other capabilities should be enriched or stabilized to facilitate the coordination of a successful EC capability needed to deploy a specific leveraging strategy. The pioneered functional capability in the above example can also be applied to an EC configuration with a pioneered structural, adaptive, or developmental capability, and each would be supported by changes to the other capabilities. In each of these cases, when a firm carefully coordinates an EC configuration, performance improves. These arguments lead to the following hypothesis:

Hypothesis 2a: Extending capability configurations are composed of at least one pioneered capability.

Hypothesis 2b: An extending capability configuration is positively related to firm performance.

**Deployment strategy: Market opportunity.** As with MC configurations, there are a limited number of strategies that can be deployed in conjunction with EC



configurations (Miller, 1986). Because configurations can be interlinked with strategy, the positive effect of EC configurations upon performance should be mediated by a specific leveraging strategy. The intent of the market opportunity strategy is to identify opportunities and weaknesses in the external environment that the company can effectively coordinate capability configurations to exploit. Because these weaknesses represent new opportunities, “some capabilities may need to be enriched and others pioneered in order to create the configurations of capabilities necessary to exploit opportunities” (Sirmon et al., 2007: 284). A distinctive competence of EC configurations is composed of at least one pioneered capability supported by enriched or stabilized capabilities to develop a higher level of performance in the market where the firm competes. Thus, a natural congruence exists between EC configurations and the market opportunity strategy. Similar to the relationship between MC configuration and resource advantage strategy, the market opportunity strategy produces increased effectiveness and internal consistency by positively mediating the relationship between EC configurations and performance (Doty, Glick, & Huber, 1993). In essence, the firm utilizes the capabilities of EC configurations to implement the market opportunity strategy and improve performance.

This mediating relationship is further verified after comparing other configuration types to the goals of a market opportunity strategy. As Doty et al. state, “fit is conceptualized in terms of lack of deviation between the multidimensional [strategy] and design configurations of the ideal type” (1993: 1214). If a firm were to coordinate MC configurations composed of stabilized capabilities, efforts to exploit

market imperfections would not be supported by the types of capabilities involved. As a result, the firm would fail in its efforts to “extend” itself and compete with superior rivals. Similarly, if a firm were to coordinate transforming configurations and deploy them to implement a market opportunity strategy, returns may increase, but at the cost of too much reconfiguration and capability development—potentially causing an overall decrease in performance. Here, the coordination would require costs that exceed the benefits derived from exploiting market opportunities (Hitt, Hoskisson, & Kim, 1997). Indeed, the coordination of too many pioneered capabilities may be too costly an intervention for a firm that doesn’t need to change strategic direction. In other words, the costs of configuring many pioneered capabilities far outweigh the benefits of a market opportunity strategy.

These arguments lead to the following hypothesis:

Hypothesis 2c: The market opportunity strategy positively mediates the relationship between extending capability configurations and firm performance.

### **Transforming capability configuration**

A firm coordinating “transforming” capability (TC) configurations seeks to make concerted efforts to change the firm in significant ways in order for it to either (1) become a viable competitor in the marketplace or (2) remain the market leader by anticipating a need for change before competitive conditions require it. The firm seeks to transform its abilities by changing its functional, structural, adaptive, and developmental capabilities. In other words, the firm either utilizes TC configurations (1) in a reactive manner by making serious course corrections to become a significant player in the

marketplace (i.e., “right the ship” ) or (2) in a proactive manner by foreseeing a coming storm and acting preemptively to stay ahead of competitors (i.e., “full steam ahead”). Therefore, TC configurations can be used by both poor and high performers for very different reasons. In either case, TC configurations are essential for long-term success (See **TABLE 2**).

On the one hand, a firm coordinating TC capabilities may be reacting to poor performance and may be significantly behind the market leader and market followers. This type of firm must exercise concerted efforts to compete in the marketplace. In essence, the firm needs to be pointed in the right direction before it begins to move forward (first direction, then velocity). On the other hand, a firm coordinating TC capabilities may recognize current trends, foresee potential market changes, and proactively strive to change in order to meet future market demands. This type of firm chooses to form TC configurations to sustain a competitive advantage and remain the market leader. Here, the firm is pointed in the right direction, progresses at a good pace, but recognizes the need to redouble efforts to stay ahead of the competition.

In order for the reactive firm to improve, it must exercise a great deal of effort to overcome the core rigidities impeding positive performance (Benner & Tushman, 2003). Therefore, all four capabilities need to be pioneered to coordinate TC configurations. A firm needing to coordinate TC configurations has taken its core competencies for granted and demonstrated an inability to recognize changes in the marketplace. Core rigidities, as Barton points out, are “the dark side of core capabilities [and are] revealed due to external events when new competitors identify a better way to serve the firm’s

customers, when new technologies emerge, or when political or social events shift the ground underneath” (1995: 30-31). In essence, the firm’s functional capabilities to carry out specific tasks, structural capabilities to allocate appropriate resources, adaptive capabilities to adjust routines, and developmental capabilities to make important human capital decisions are no longer at the cutting edge of innovation and strategy in the marketplace. For example, Borders Group failed because its core competencies became core rigidities. The firm’s ability to attract customers based on store locations and a desirable physical environment was no longer satisfactory as the market turned to digital technologies for the primary source of purchasing and reading books (Spector & Trachtenberg, 2011). Borders’ may not have had either the adaptive capabilities sufficient to adjust routines or the functional, structural, or developmental capabilities sufficient to compete in the marketplace. Indeed, in order for the firm to overcome the inertia and poor performance that comes from core rigidities, it should have pioneered its four capabilities *before* it was too late and the firm had to liquidate.

The strategic actions of Intel Corp., the market leader in semiconductor chip production, contrast those of Borders. Intel Corp. resembles a proactive, high performance firm utilizing TC configurations. The firm continually stays ahead of competitors due to its ability to anticipate new product needs before they are required by the market. In order to manage frequent “product entries and market exits, [Intel] must develop capabilities to use diverse and fast-changing market information so that its demand views sharpen perpetually and its demand forecasts improve over time” (Wu et al., 2010). To remain the “first mover”, Intel correctly predicts the next product that will

catch consumers' attention (Piraino & Thomas Jr., 2002-2003), and most likely utilizes pioneered capabilities in order to transform the corporation to meet client needs.

As with other capability configurations, TC configurations also form with a starting point. A significant restructuring, a new product line, a new CEO, or new analytical forecasting routines are some examples of “starting points” of TC configurations. For both reactive and proactive firms, the pioneered capabilities must be integrated such that they are interdependent and support one another, or any attempt to either become a significant player or retain leadership in the industry will fail (Miller, 2011). Significant investments into the formation of new capabilities may be costly, but the opportunity cost of not developing them may be worse (Teece et al., 1997). For example, a firm may no longer be a viable competitor in the marketplace due to its structure, and without restructuring, it may go out of business. The restructuring initiative is the starting point for the firm to create an effective TC configuration. The efforts of completely restructuring a firm will change the tasks of the organization and the way the tasks are conducted. Therefore, to support the initiative, the firm must pioneer new functional capabilities to support it. Also, the firm restructuring requires creation of new routines to utilize the new structure to adapt and react to changes in the competitive environment. In addition, a new structure of the firm will create new positions and responsibilities that will require developing new training initiatives to assist human capital in administering the newly structured firm. Over time, these changes will have a positive effect on firm performance. These arguments lead to the following hypothesis:

Hypothesis 3a: Transforming capability configurations are composed of four pioneered capabilities that function in concert.

Hypothesis 3b: A transforming capability configuration is positively related to firm performance.

**Deployment strategy: Entrepreneurial.** The entrepreneurial strategy should mediate the positive relationship between coordinated TC configurations and firm performance (Miller, 1986). The intent of the entrepreneurial strategy is to develop capability configurations to produce new goods and/or services that require new markets. When Sirmon et al. (2007) describe the three types of leveraging strategies, they state the differences between the market opportunity strategy and entrepreneurial strategy in terms of capability configurations. For a market opportunity strategy, the firm may focus on one pioneered capability in its configuration, such as leveraging “its R&D capability to create an incremental innovation or develop a new service to package with existing products to satisfy growing or evolving customer needs” (Sirmon et al., 2007: 284). For an entrepreneurial strategy, configurations with pioneered “R&D, engineering, and marketing capabilities [are] needed to design the new product or service that satisfies the customers in a new market” (Sirmon et al., 2007: 285). I extend this logic further by stating that a distinctive competence of TC configurations is composed of all four pioneered capabilities to either transform the organization into a competitor in the marketplace or assist the firm to keep its market leadership and stay ahead of competitors. Thus, a natural congruence exists between TC configurations and the entrepreneurial strategy. Similar to the relationship between the first two configurations (i.e., MC and EC) and leveraging strategies (i.e., resource advantage and market

opportunity), the entrepreneurial strategy produces growth through new products and services, structures, routines, and training by positively mediating the relationship between TC configurations and performance (Hambrick & Schechter, 1983). In essence, the firm utilizes the capabilities of TC configurations to implement the entrepreneurial strategy and improve performance.

This mediating relationship is further verified after comparing other configuration types to the goals of an entrepreneurial strategy. If a firm were to coordinate MC configurations composed of stabilized capabilities, efforts to change the firm would not be accompanied by the types of capabilities needed to push the firm in the right direction. As a result, the firm would fail in its efforts to “transform” itself to compete in the marketplace. Similarly, EC configurations would also not be sufficient to engage in an entrepreneurial strategy. While one pioneered capability would help the firm in one area to expand and compete, that one change initiative would likely be inadequate to withstand the difficulties associated with becoming a true competitor or thriving as the leader in the marketplace. These arguments lead to the following hypothesis:

Hypothesis 3c: The entrepreneurial strategy positively mediates the relationship between transforming capability configurations and firm performance.

## **CHAPTER III**

### **METHODS**

#### **Sample**

As a context for examining the leveraging process that firms use to create value and improve performance, I draw upon a sample of National Basketball Association (NBA) organizations over the period of 2000 to 2013—a total of 14 years. The sample was acquired from Basketball-Reverence.com (Kubatko, 2013). Professional basketball is a highly competitive sport wherein teams utilize the same number of players to perform similar tasks using shooting, rebounding, and defensive skill sets. These characteristics are highly desirable for empirical tests of theory, as they allow consistent measurement of constructs and comparison across organizations. In addition, the salient, industry-specific environments of the National Basketball Association (NBA) are useful in testing theory related to competitive organizations and their resources. A single industry is preferable to promote comparison, especially when the focus is on resources (important resources/capabilities vary across industries). The nature of rivalrous competitive engagements between NBA organizations provides data with features essential to testing the RBV generally and the deployment process of resource orchestration in particular.

Each basketball team plays in one of two conferences (Eastern and Western), and teams within each conference play all other teams in both conferences, for a total of 82



games played by each team during the regular season. This study focuses on aggregated annual statistics at the end of each regular season.

Utilizing this sample is appropriate for testing the resource-based view and leveraging hypotheses for several reasons. First, athletic organizations are useful in testing theory related to organizations engaged in competitive rivalry and their resources. Samples of baseball and basketball organizations have been used to explore managerial succession (Pfeffer & Davis-Blake, 1986), escalation of commitment (Staw & Hoang, 1995), the effects of strategic fit on performance (Wright, Smart, & McMahan, 1995), theory pertaining to tacit team knowledge (Berman, Down, & Hill, 2002), resource management actions effects on achieving and sustaining competitive advantage (Sirmon et al., 2008), institutional and organizational factors that lead to differences in organizational status (Washington & Zajac, 2005), and effects of inequity in a pay-for-performance context (Harder, 1992). Second, the organizations share a common factor market and general environment. While the quantity of players and coaches per organization is highly similar, the quality of their human capital varies (and thus, importantly for this study, their capabilities vary). Third, implications are applicable to other business organizations because athletic organizations face markets that are similar to those of businesses in their competitive rivalry, and both face constraints on the attraction and retention of talent necessary to improve firm performance.<sup>6</sup>

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<sup>6</sup> In basketball retention varies because players and coaches sign contracts with work-related durations associated with them.

The observations for the raw data are at the player-game level. Each player for each team had, at most, 82 game statistics per season over a 14 year span. Therefore, the original sample has a total of 357,833 observations. In addition, the sample is unique because no missing data exists.

The theoretical arguments for this study focus on team-level capabilities and strategies, and the dataset was corrected to reflect those arguments. Therefore, the original dataset was condensed to team-by-year observations. Each of the teams had 14 observations except for Charlotte. Due to NBA expansion, the Charlotte Hornets moved to New Orleans. Charlotte formed a new franchise in the 2004-05 season called the Charlotte Bobcats. As a result, the new Charlotte franchise only had 9 team-year observations. Therefore, the total number of observations in the examined was 29 teams over a 14-year span plus one team over a nine-year span  $[(29 * 14) + (1 * 9)]$ . This equaled 415 observations in the tested sample. Due to the lag structure of the “added salary” variables, where the first and last years of the sample were used to calculate other variables, the tested sample decreased from 415 to 355. Thus, the final analyzed dataset included the years 2001 to 2012.

### **Measures**

The sample includes all of the statistics for each player and their teams that have competed in the NBA in regular season games. Player statistics include games started, minutes played, field goal data (attempts and percentages), offensive rebounds, defensive rebounds, total rebounds, assists, steals, blocks, turnovers, personal fouls, and

total points. The dataset also includes advanced statistics that include true shooting percentage (i.e., takes into account the added value of three-point shots and free throws), effective field goal percentage (i.e., a representation of a player's shooting ability—it takes into account the bonuses of a made three-pointer), offensive rebound percentage (i.e., an estimate of the percentage of available offensive rebounds a player grabbed while he<sup>7</sup> was on the floor), defensive rebound percentage (i.e., an estimate of the percentage of available defensive rebounds a player grabbed while he was on the floor), total rebound percentage (i.e., an estimate of the percentage of available rebounds a player grabbed while he was on the floor), assist percentage (i.e., an estimate of the percentage of teammate field goals a player assisted while he was on the floor), steal percentage (i.e., an estimate of the percentage of opponent possessions that end with a steal by the player while he was on the floor), block percentage (i.e., an estimate of the percentage of opponent two-point field goal attempts blocked by the player while he was on the floor), turnover percentage (i.e., an estimate of turnovers per 100 plays), usage percentage (i.e., an estimate of the percentage of team plays used by a player while he was on the floor), offensive rating (i.e., for players it is points produced per 100 possessions, while for teams it is points scored per 100 possessions), and defensive rating (i.e., for players and teams it is points allowed per 100 possessions). In addition, the dataset includes personal demographics pertaining to players and coaches (date of birth, height, weight, name of school, etc.)

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<sup>7</sup> Given the National Basketball Association's limitation to male players, I use masculine pronouns here.

**Dependent variable: Performance**

The performance measure is a team's regular season win percentage. I use this performance measure to eliminate potential issues with abnormal years and abnormal number of games played. For instance, the strike for the 2011-2012 season limited the number of games played to 66 instead of the regular 82-game season. In addition, in the 2012-2013 season, the Boston Celtics only played 81 games. Using percentage win instead of the absolute number of games corrects for the discrepancy with total games played.

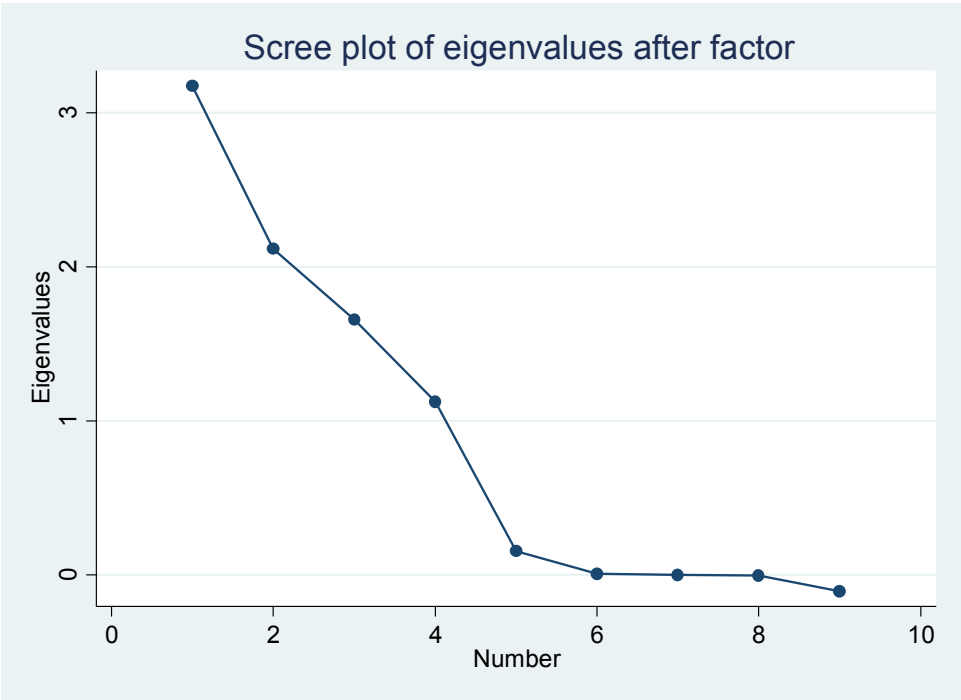
This variable is calculated by dividing the number of team wins by the number of games the team played in a season. Hypothetically, if a team won 45 games during a season, the team's win percentage would be 54.88 percent ( $45 \text{ wins} / 82 \text{ games played}$ ).

**Independent variables: Capabilities**

Independent variables were created through exploratory factor analysis. The exploratory factor analysis used basic statistics provided by Basketball-reference.com. The variables included were: field goals made (2pts), field goal attempts (2pts), three-point shots made, three-point shot attempts, free throws made, free throw attempts, offensive rebounds, defensive rebounds, total rebounds, assists, steals, blocks, turnovers, personal fouls, points, assist-to-turnover ratio, average salary of players added to the team, average salary of players added to the team as a percentage of total team salaries, number of awards per team in relation to league mean, coaching changes, and player efficiency rating (PER). Each of these variables was standardized before running the factor analysis.

The purpose of conducting a factor analysis was to determine measures of team configurations as independent variables. However, the results of the analysis yielded factors that more accurately depict measures of capabilities. The results of the exploratory factor analysis revealed three factors: scoring capability (factor 1), control capability (factor 2), and managerial capability (factor 3). **FIGURE 4** and **TABLE 3** and **TABLE 4** show the results of the factor analysis for capability measure.

**FIGURE 4: Scree plot of eigenvalues after factor analysis for capability measure**



**TABLE 3: Eigenvalues after factor analysis for capability measure**

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	3.172	1.058	0.391	0.391
Factor2	2.114	0.457	0.261	0.651
Factor3	1.657	0.535	0.204	0.856

**TABLE 4: Factor loadings for capability measure**

Variable	Factor1	Factor2	Factor3	Uniqueness
Field Goals (2pt)	0.8347			0.2898
Field Goal Attempts (2pt)	0.6034			0.6152
3-points made	0.8161			0.2712
3-point Attempts	0.7819			0.3169
Free Throws		0.9823		0.0321
Free Throw Attempts		0.9171		0.1582
Total Points	0.9059			0.0308
Average salary of added players			0.9047	0.1774
Salary added as % of total team salary			0.9107	0.1659

Note: blanks represent  $\text{abs}(\text{loading}) < 0.4$

**Scoring capability.** The measures of the five components of scoring capability were factor analyzed and loaded on one factor (eigenvalue = 3.17;  $\alpha = 0.81$ ). Thus, I created a composite measure of scoring capabilities based on standardized factor scores. The variables within this measure included field goals made, field goal attempts, three-points made, three-point attempts, and total points. The definition of each of these statistics focuses on the team’s ability to shoot the basketball during the live-action sequences of the game. Therefore, the scoring capability is defined as “the ability to possess the ball and take/make shots as the team moves on the court.” This capability closely resembles the theoretical definition of functional capability described above.

**Control capability.** The measures of the two components of control capability were factor analyzed and loaded on one factor (eigenvalue = 2.11;  $\alpha = 0.96$ ). Thus, I created a composite measure of control capabilities based on standardized factor scores. The variables within this measure included free throws made and free throw attempts. The definition of each of these statistics focuses on the team's ability to keep the ball, draw fouls, and make points due to keeping the ball. Further, since most free-throw shots occur at the end of the game, this capability also demonstrates the team's ability to control the ball late in the game. Therefore, the control capability is defined as "capability to control the ball at critical points in the game and draw fouls." This capability also closely resembles the theoretical definition of functional capability described above.

**Managerial capability.** The measures of the two components of managerial capability were factor analyzed and loaded on one factor (eigenvalue = 1.66;  $\alpha = 0.92$ ). Thus, I created a composite measure of managerial capabilities based on standardized factor scores. The variables within this measure included average salary of players added to the team and average salary of players added to the team as a percentage of total team salaries. In general, salaries are a useful construct for determining the skill of a player.<sup>8</sup> Players with higher salaries tend to have earned additional money due to performance on the basketball court (Harder, 1992).

The average salary of players added captures the number and value of players added to the team during the off-season. The variables are created by identifying trades

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<sup>8</sup> For the purposes of this research study, I am holding sports agents' negotiating skills constant.

and rookies for the team during the off-season each year, and then adding the added players' salary for the new team to determine an aggregate total for added salary for the year. The higher the salary added, the more radical are the managerial decisions for changing the structure of the team.

The average salary of players added as a percentage of total team salaries is a more advanced measure, taking into account the salary cap imposed on each team in the NBA. Salary cap arrangements are designed to prevent teams from acquiring the services of more than two or three top-tier players (Berman et al., 2002). The salary cap was imposed to limit the total salary of a team's players, aiming to ensure a balance among teams (Ertug & Castellucci, 2013). Therefore, this measure considers the added players salary in comparison to the total added salaries of the team.

These two variables loaded together, creating a "managerial" capability. This capability is defined as "the manager's capability to add appropriate basketball players (i.e. structure) from the strategic factor market that will significantly add to the productivity of the team." This capability closely resembles the theoretical definition of structural capability described above.

The two variables (average salary of added players and salary added as a percentage of total team salary) were lagged for only one year. This was done to examine the impact of added players upon immediate deployment of strategies. Longer lags were not considered for three reasons. First, changes to team rosters occur frequently, and additional lags increase complexity to the statistical examination that may create noise in the results. Second, a one-year lag was necessary in order to be



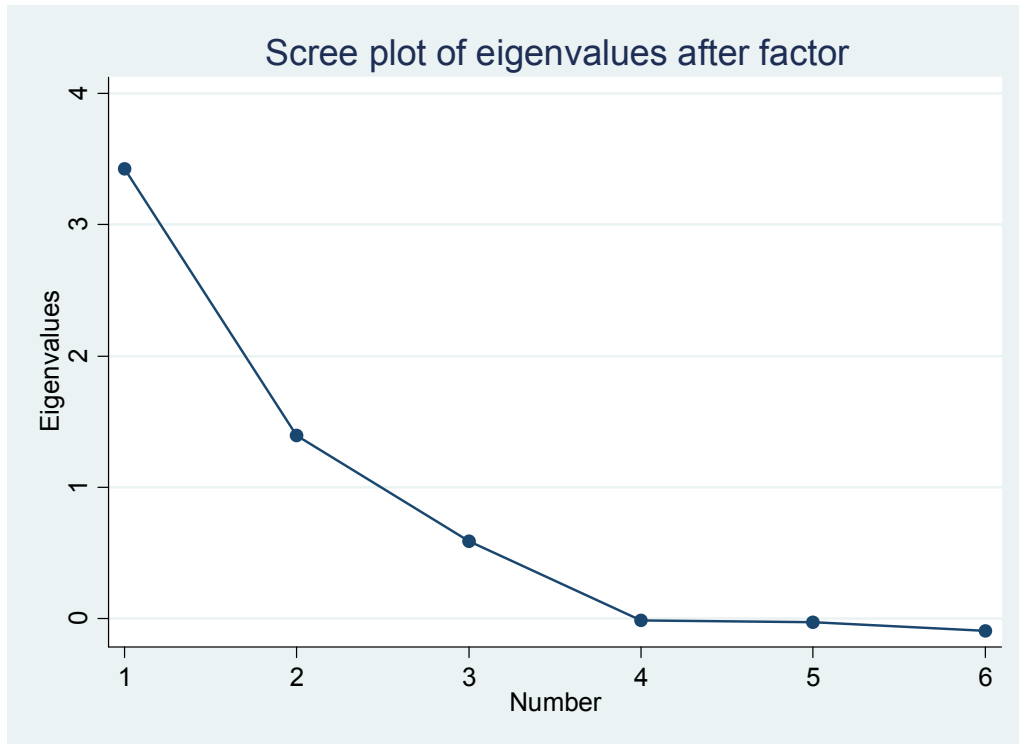
consistent with the other variables in the sample which are based off of statistics in the current year (e.g., capabilities in “year 1” impact strategies and performance in “year 1”). Third, the theoretical arguments focus on capabilities’ immediate impact on strategy, and the mediating effect of “current” strategies upon the capability-performance relationship. Adding longer lags would not be consistent with these arguments.

### **Mediating variables: Leveraging strategies**

Mediating variables were created through exploratory factor analysis. The exploratory factor analysis used advanced, strategy-based statistics provided by Basketball-reference.com. The variables included were: total possessions, defensive possessions, points produced, scoring possessions, defensive stops, defensive rating, offensive rating, usage percentage, and pace factor. Each of these variables was standardized before running the factor analysis.

The purpose of conducting a factor analysis was to determine measures of leveraging strategies as mediating variables. Three strategies were hypothesized. Two strategies loaded: aggressive and conservative strategies. **FIGURE 5** and **TABLE 5** and **TABLE 6** show the results of the factor analysis for leveraging strategy measure.

**FIGURE 5: Scree plot of eigenvalues after factor analysis for strategy measure**



**TABLE 5: Eigenvalues after factor analysis for strategy measure**

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	3.427	2.032	0.649	0.649
Factor2	1.395	0.804	0.264	0.913

**TABLE 6: Factor loadings for strategy measure**

Variable	Factor1	Factor2	Uniqueness
Usage Percentage		0.7478	0.4142
Offensive Rating		0.8836	0.1711
Scoring Possessions	0.8815		0.1723
Points Produced	0.8909		0.1488
Defensive Possessions	0.9334		0.1240
Pace Factor	0.9205		0.1473

Note: blanks represent  $\text{abs}(\text{loading}) < 0.4$

**Conservative strategy.** The measures of the four components of conservative strategy were factor analyzed and loaded on one factor (eigenvalue = 3.43;  $\alpha = 0.94$ ). Thus, I created a composite measure of conservative strategy based on standardized factor scores. The variables within this measure included defensive possessions, points produced, scoring possessions, and pace factor. The definition of each of these statistics focuses on the team's strategy for possessing the ball and controlling the tempo of the game. Therefore, the conservative strategy is defined as "the team's strategy for controlling the court." This capability closely resembles the theoretical definition of the resource-advantage strategy described above.

**Aggressive strategy.** The measures of the two components of conservative strategy were factor analyzed and loaded on one factor (eigenvalue = 1.39;  $\alpha = 0.76$ ). Thus, I created a composite measure of aggressive strategy based on standardized factor scores. The variables within this measure included offensive rating, and usage percentage. Offensive rating measures a team's offensive performance, and usage percentage indication of how efficient a team is with scoring given the amount of possessions they have. The higher the usage percentage, the better the team is at scoring when it has the ball. Therefore, the aggressive strategy is defined as "the team's strategy for creating opportunities to score." This capability closely resembles the theoretical definition of either the market-opportunity or entrepreneurial strategy described above.

### **Control variables**

I controlled for three additional factors that can influence the relationship among capabilities, strategies, and performance on a year-by-year basis. First, I controlled for

the age of the team because the experience as part of the NBA is a factor in making choices regarding capabilities and strategies. Second, I controlled for each team's prior success by including its historical playoff history (i.e., continuous variable indicating the number of times the team has made it to the post season since franchise inception). This was done because the relative success of teams to make the playoffs could be a factor affecting their capabilities and strategies. Finally, I controlled for potential unusual events during a particular season by adding dummy variables for each season with 1 indicating the year.

Team size and slack are automatically controlled due to this specific basketball-team sample. NBA rules dictate that each team must have twelve players (National Basketball Association, 2014), and the level of availability of resources across teams is assumed to be equivalent.

### **Analytical approach**

The final dataset consists of panel data of 355 team-year observations. The data are panelized, and to control for unobserved team-specific and year-specific heterogeneity (Bergh, 1993) year dummies were generated and tested in the model. The Heckman procedure was used to correct for sample selection bias. The two stage approach produced the inverse mills ratio, which I then applied back into the original model in the second stage to control for sample selection bias. The test was not significant (i.e., the results were greater than alpha at 0.05), and I concluded that I should use random effects with my panel regression analysis. I then employed STATA's XTREG random-effects regression procedure. The random-effects application

minimizes problems with autocorrelation and heteroskedasticity (Bowen & Wiersema, 1999; Hitt, Gimeno, & Hoskisson, 1998; Sayrs, 1989). Moreover, random-effects models account for both the temporal (within team) and inter-team variation in the sample (STATA Press, 2007). In addition, each of the variables used in the analysis were for the current year. Therefore, the capabilities and strategies employed for the focal year were tested to see if they affected that year's performance.

## CHAPTER IV

### RESULTS

**TABLE 7** lists descriptive statistics and intercorrelations for the variables. The results of the hypotheses based on panel regression analyses are presented in **TABLE 8**. The analyses of the variance inflation factor scores were all below 10 (Kutner, Nachtsheim, & Neter, 2004). The mean VIF is 3.12. These results suggest that there are no problems of multicollinearity.

Hypotheses 1a, 2a, and 3a propose appropriate configurations of capabilities. As stated earlier, the factor analysis yielded three measures that are more closely related to capabilities. As such, these three hypotheses are not supported.

Hypotheses 1b, 2b, and 3b relate to the positive effect of the three configurations upon firm performance. These three hypotheses are not supported since the specific nature of the theoretically proposed independent variable changed during the factor analysis procedure. Nevertheless, the statistical analysis does show that the three capabilities had significant effects upon performance. As shown in model 7 of **TABLE 8**, the effect of a team's scoring capability on performance is positive and statistically significant. Model 8 illustrates that the effect of a team's control capability on performance is positive and statistically significant. Model 9 illustrates that the effect of a team's managerial capability on performance is statistically significant. However, the coefficient for managerial capability was negative, which is counter to the three hypotheses that proposed positive effects.

Hypotheses 1c, 2c, and 3c predict that a firm's strategy will mediate the relationship between its configurations and its performance. Here, I address the proposed hypotheses as capabilities. I adopt Baron and Kenny's (1986) widely used methodology to examine the mediation effects. I supplement this analysis with Sobel's (1982) test to determine the type and significance of the mediation effect (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002).

According to Baron and Kenny (1986), testing for mediation consists of four critical steps. First, the predictor variable must influence the presumed mediator. Second, the predictor variable must influence the outcome variable. Third, the mediator must influence the outcome variable while controlling for the predictor variable (Path b in Fig. 1). Finally, a previously significant relationship between the predictor and outcome variables must be reduced in the presence of the mediator (Miller, Triana, Reutzel, & Certo, 2007).

Models 1, 2, 4 and 5 support the first condition for mediation in that the scoring and control capabilities influenced the conservative and aggressive strategies. Models 7, 8 and 9 support the second condition for mediation in that all three capabilities influence performance. Models 14 through 18 support the third condition for mediation in that the strategies significantly impact performance separately controlling for each of the capabilities (Model 13 does not because of the high correlation—0.80—between scoring capability and conservative strategy). However, only models 14, 16 and 17 support Baron and Kenny's (1986) fourth condition for mediation in that the previously

significant relationship between capabilities and performance are reduced in the presence of the mediator.



**TABLE 7: Descriptive statistics and correlations<sup>a</sup>**

<b>Variables</b>	<b>Mean</b>	<b>s.d.</b>	<b>Minimum</b>	<b>Maximum</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1. Age	36.5	15.9	0.00	66.00							
2. Prior Performance	27.3	13.7	2.00	60.00	0.76*						
3. Scoring Capability (IV)	0.00	1.00	-2.28	3.31	0.20*	0.10*					
4. Control Capability (IV)	0.00	1.00	-2.54	2.80	0.08	0.07	0.00				
5. Managerial Capability (IV)	0.00	0.94	-1.49	3.47	-0.02	-0.07	0.00	0.00			
6. Conservative Strategy (ME)	0.00	0.99	-2.21	3.51	0.21*	0.09	0.80*	0.39*	0.02		
7. Aggressive Strategy (ME)	0.00	0.93	-2.98	3.04	-0.02	0.07	0.22*	0.09	-0.07	0.01	
8. Win Percentage (DV)	0.50	0.15	0.11	0.82	0.04	0.23*	0.36*	0.13*	-0.14*	0.13*	0.43*

<sup>a</sup> The independent and mediating variables were constructed on the basis of factor scores; thus the mean is 0 and the standard deviation is 1 (STATA Reference, 1999).

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .001$

**TABLE 8: Results of panel regression**

Variables	Model 1 Conserv Strat	Model 2 Conserv Strat	Model 3 Conserv Strat	Model 4 Aggres Strat	Model 5 Aggres Strat	Model 6 Aggres Strat	Model 7 Win %	Model 8 Win %	Model 9 Win %	Model 13 Win %	Model 14 Win %	Model 15 Win %	Model 16 Win %	Model 17 Win %	Model 18 Win %
Intercept	-0.652*** (0.193)	-0.355 (0.334)	-0.821* (0.351)	0.691* (0.280)	0.784** (0.281)	0.671** (0.257)	0.509*** (0.038)	0.526*** (0.043)	0.500*** (0.041)	0.467*** (0.037)	0.533*** (0.043)	0.524*** (0.041)	0.469*** (0.031)	0.473*** (0.037)	0.455*** (0.036)
Team Age	0.014* (0.006)	0.017 (0.011)	0.019 (0.012)	-0.026** (0.009)	-0.025** (0.009)	-0.024** (0.008)	-0.004*** (0.001)	-0.004** (0.001)	-0.003** (0.001)	-0.003** (0.001)	-0.004** (0.001)	-0.004** (0.001)	-0.003** (0.001)	-0.002+ (0.001)	-0.002+ (0.001)
Prior Performance	-0.012+ (0.007)	-0.010 (0.013)	-0.009 (0.014)	0.028** (0.010)	0.029** (0.010)	0.028** (0.009)	0.005*** (0.001)	0.006*** (0.001)	0.005*** (0.001)	0.005*** (0.001)	0.006*** (0.001)	0.006*** (0.001)	0.004*** (0.001)	0.004** (0.001)	0.004** (0.001)
Scoring Capability	0.774*** (0.037)			0.172** (0.054)			0.077*** (0.009)						0.128*** (0.013)	0.065*** (0.008)	
Control Capability		0.372*** (0.044)			0.103* (0.048)			0.025** (0.008)			0.018+ (0.009)			0.017* (0.008)	
Managerial Capability			0.031 (0.046)			-0.043 (0.046)			-0.019* (0.008)			-0.020* (0.008)			-0.015* (0.008)
Conservative Strategy										-0.066*** (0.012)	0.021* (0.010)	0.029** (0.009)			
Aggressive Strategy													0.060*** (0.008)	0.067*** (0.009)	0.068*** (0.009)
Observations	355	355	355	355	355	355	355	355	355	355	355	355	355	355	355
Number of teams	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
chi2	686.3***	200.7***	106.7***	73.73***	67.39***	63.78***	96.94***	24.50*	21.87+	133.9***	28.84*	32.37**	179.8***	91.62***	90.56***
R-squared	0.688	0.309	0.191	0.187	0.193	0.184	0.266	0.122	0.119	0.333	0.134	0.144	0.39	0.269	0.269

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.1; all two-tailed tests.

These four criteria can be used as one way to judge whether or not mediation is occurring. However, MacKinnon and Dwyer (1993) and MacKinnon, Warsi, and Dwyer (1995) suggest additional, statistically-based methods to be used to formally assess mediation. One of the suggested methods is the Sobel test, which can be used to test the significance of a mediation effect in large samples (Miller et al., 2007; Preacher & Hayes, 2008). The Sobel test determines if, after including the mediator in the model, the reduction in the effect of the independent variable is a significant reduction—therefore testing whether the mediation effect is statistically significant. Stated differently, the Sobel test checks for the statistical significance of the indirect effect (Miller et al., 2007). An indirect effect exists if the Sobel test z-value is statistically significant ( $>1.96$ ). Because scholars recommend the Sobel test (Miller et al., 2007; Preacher & Hayes, 2008), I utilize this test as the final step for examining the nature of the capability-strategy mediations (shown in **TABLE 9**).

**TABLE 9: Results of Sobel test<sup>a</sup>**

<b>Mediator: Conservative Strategy</b>	<b>a</b>	<b>Sa</b>	<b>B</b>	<b>Sb</b>	<b>a x b (indirect effect)</b>	<b>Z score</b>
Scoring Capability	0.774	0.037	-0.066	0.012	-0.051	-5.164**
Control Capability	0.372	0.044	0.021	0.010	0.008	2.029*
Managerial Capability	0.031	0.046	0.029	0.009	0.001	0.634
<b>Mediator: Aggressive Strategy</b>	<b>a</b>	<b>Sa</b>	<b>B</b>	<b>Sb</b>	<b>a x b (indirect effect)</b>	<b>Z score</b>
Scoring Capability	0.172	0.054	0.060	0.008	0.010	2.925**
Control Capability	0.172	0.048	0.067	0.009	0.007	2.063*

**TABLE 9 Continued**

<b>Mediator: Aggressive Strategy</b>	<b>a</b>	<b>Sa</b>	<b>B</b>	<b>Sb</b>	<b>a x b (indirect effect)</b>	<b>Z score</b>
Managerial Capability	-0.043	0.046	0.068	0.009	-0.003	-0.921

$$^a Z = ab / \sqrt{S_a^2 S_b^2 + b^2 S_a^2 + a^2 S_b^2}$$

*a* = Path *a*

*b* = Path *b*

*S<sub>a</sub>* = standard error of path *a*

*S<sub>b</sub>* = standard error of path *b*

For the conservative strategy mediator, the Z score for scoring capability is -5.164 ( $p < 0.01$ ); however, scoring capability did not mediate the conservative strategy. The reason is because of collinearity between scoring capability and conservative strategy (TABLE 7), and the previously significant relationship between capabilities and performance (TABLE 8, Model 7) *increases* in the presence of the mediator (TABLE 8, Model 13). Therefore, this is not an indicator of the presence of an indirect effect.

Also, for the conservative strategy mediator, the Z score for control capability is 2.029 ( $p < 0.05$ ) providing support for the presence of an indirect effect. The Z score for managerial capability is 0.634 ( $p > 0.05$ ) providing no support for the presence of an indirect effect.

As for the aggressive strategy mediator, the Z score for scoring capability is 2.925 ( $p < 0.01$ ), and for control capability is 2.063 ( $p < 0.05$ ), thus providing support for an indirect effect. The Z score for managerial capability is -0.921 ( $p > 0.05$ ), providing no support for the presence of an indirect effect. These results further support the prior results but offer a more fine-grained understanding. The results of the mediation tests are summarized in FIGURE 6.

Hypothesis 1c states that the resource advantage strategy positively mediates the relationship between maintaining capability configurations and firm performance. Here, the analysis shows that conservative strategy positively mediates the relationship between control capability and team performance. As stated above, the definition of conservative strategy is similar to resource advantage strategy. In addition, the definition for control capability is similar to the goals of a maintaining configuration. Therefore, I can conclude that Hypotheses 1c is supported, and that the nature of the mediation effect of conservative strategy is partial as opposed to full.

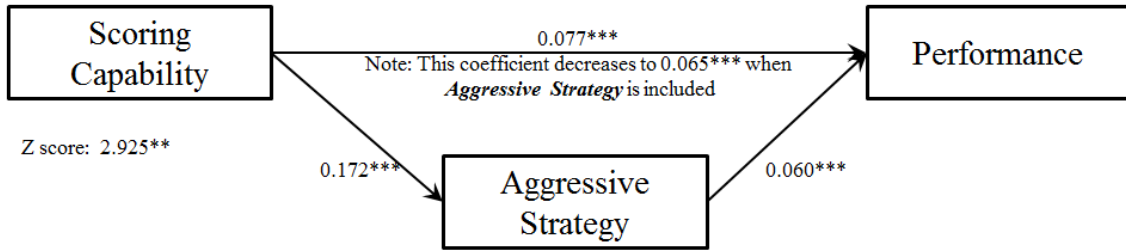
Hypothesis 2c states that the market opportunity strategy positively mediates the relationship between extending capability configurations and firm performance. Here, the analysis shows that aggressive strategy positively mediates the relationship between control capability and team performance. The definition of aggressive strategy is similar to an entrepreneurial strategy. The definition for control capability is similar to the goals of a maintaining configuration. Therefore, I can conclude that Hypotheses 2c is not supported.

Hypothesis 3c states that the entrepreneurial strategy positively mediates the relationship between transforming capability configurations and firm performance. Here, the analysis shows that aggressive strategy positively mediates the relationship between scoring capability and team performance. As stated above, the definition of aggressive strategy is similar to an entrepreneurial strategy. In addition, the definition for scoring capability is similar to the goals of a transforming configuration. Therefore, I can

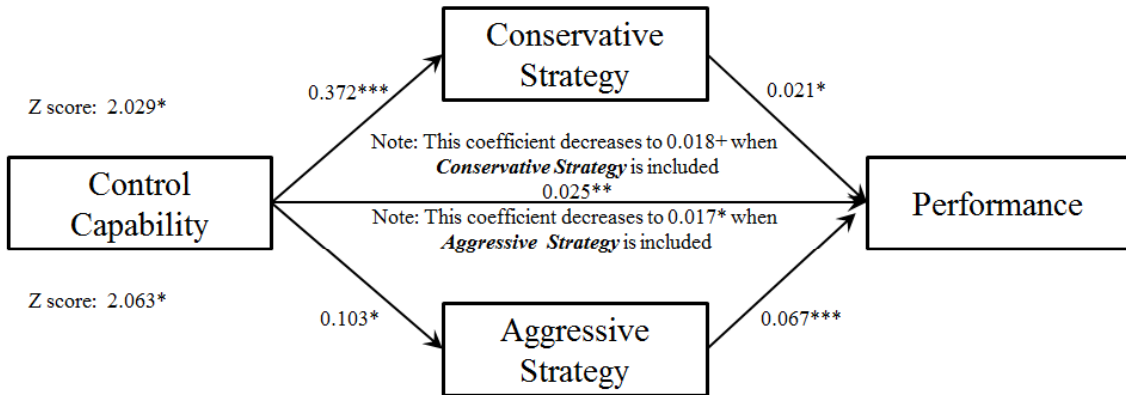
conclude that Hypotheses 3c is supported, and that the nature of the mediation effect of conservative strategy is partial as opposed to full.

**FIGURE 6: Mediation tests results**

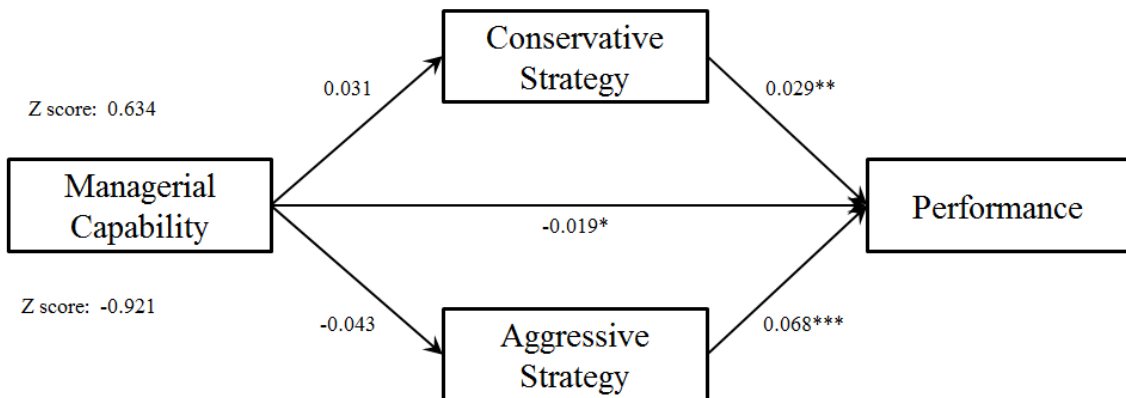
6a. Aggressive strategy mediating scoring capability and performance



6b. Conservative and aggressive strategy mediating control capability and performance



6c. No strategy mediation of managerial capability and performance



## CHAPTER V

### DISCUSSION AND CONCLUSION

The resource-based view of the firm (RBV) remains influential as a theoretical lens for studying questions associated with strategic management (Colbert, 2004; Mahoney, 1995; Sirmon et al., 2007). Sirmon et al. (2007) argue that a firm's resource portfolio is managed through the processes of structuring, bundling, and leveraging in order to implement strategy, create value for stakeholders, and improve performance. The leveraging process is composed of three subprocesses: mobilizing, coordinating, and deploying. Despite the importance of these subprocesses, a great deal remains to be learned about how the subprocesses theoretically connect firm resources to rent generation—particularly as it relates to capabilities and their coordination into configurations. Previous work has focused on the characteristics of how managers use resources (Sirmon et al., 2008); but, scholars have yet to explore the relationships among capabilities, configurations, leveraging strategies, and performance. The objective of this study was to fill this void by theoretically and empirically examining these relationships. I argued that four capabilities (functional, structural, adaptive, and developmental) should be carefully coordinated to create three capability configurations (maintaining, extending, and transforming). I also argued that each of the three capability configurations positively affects firm performance in terms of overall win-loss records against competitors. Lastly, I asserted that the three leveraging strategies (resource



advantage, market opportunity, and entrepreneurship) positively mediate the relationships between configurations and performance.

The findings of this study are different than what was proposed. This was due to the fact that the analyses yielded measures that are more characteristic of capabilities than configurations. The variables that loaded into factors are more indicative of the resources of the firm (i.e., human capital resources demonstrated through the ability to shoot the ball and control the court; financial resources to acquire players necessary to win games). By performing a factor analysis, I empirically examined how resources were bundled into capabilities—not capabilities into configurations. This had an impact on hypotheses 1a, 2a, and 3a, which suggested the composition of specific configurations. In addition, the measures created were centered on basketball teams instead of firm-level capabilities and strategies. Specifically, the measures created for capabilities (scoring, control, and managerial) were different than the configurations (maintaining, enriching, and transforming). The differences likely relate to the fact that the theoretical arguments and hypotheses focused on the organization level, while the statistical NBA data were based on the team (core business) level. Capabilities are likely more relevant at the team level and configurations of capabilities more likely at the organization level. On the organization level, the firm should also have other types of capabilities to gain and sustain a competitive advantage. For example, an NBA organization needs an effective scouting capability, HR and administrative capability, and ownership and governance capability (i.e., owner and/or CEO decision making and

ownership structure). The organization must also manage customer relations (e.g., fans) and ticket sales (marketing capability).

Likewise, the strategy measures of team-level data set are more representative of team-level operational strategies designed to take advantage of core-business capabilities. Nevertheless, the strategy measures are more comparable with those hypothesized: conservative being similar to resource advantage strategy, and aggressive being similar to entrepreneurial strategy. Considering these differences, the findings of this study still provide interesting and important outcomes.

While the results may not fully support the thrust of these theoretical arguments, I believe that they do provide several theoretical contributions to the resource-based view of the firm, and, in particular, to the growing resource orchestration literature. I begin with a review of the most significant results of this research.

### **Critical Findings**

The findings of this study produce an intriguing picture of the role of both capabilities and strategies in performance outcomes using seasonal NBA basketball performance measures. The findings also provide several contributions to the literature and add merit to the growing stream of work related to resource orchestration (Helfat et al., 2007; Sirmon et al., 2007; Sirmon et al., 2011).

#### **Capability relationship with performance**

Based on the results of the panel regressions, capabilities have a significant effect on performance. Until now, little was known as to the specific types of capabilities that

managers should generate and manage or orchestrate in order to create value and improve performance. I argue that capabilities are essential for firm performance, supporting Helfat and Peteraf's (2003) assertion that firm-level capabilities are the firm's ability "to perform a coordinated set of tasks utilizing organizational resources" (Helfat & Peteraf, 2003: 999). The results suggest that resources are bundled to form specific capabilities that in turn affect performance. Though the four proposed (theoretically developed) capabilities did not receive support, the empirics support the existence of specific capabilities (scoring, control, and managerial) and their attributes.

First, a scoring capability has a significant positive effect on performance. Interpreted, a scoring capability is similar to the firm's ability to find multiple ways to generate rent for the organization. A basketball team's scoring capability depends upon both two-point field goals (attempted and made) and three-point field goals (attempted and made). Correspondingly, a firm may have multiple potential sources (e.g., products and/or services) for rent generation. *Ceteris paribus*, when a firm has the capability to generate revenues in a variety of forms, whether through multiple products, multiple services or both, performance is more likely to be higher. Building these revenue generating capabilities is important for the success of the firm, and the created scoring capability is representative of this.

Second, a control capability also has a significant positive effect on performance. Interpreted, control capability is similar to the firm's ability to identify actions that need to be taken during critical competitive circumstances in the marketplace. Just as a basketball team utilizes its control capability to manage the ball at critical points in the

game, so too a firm uses this capability to recognize interactions with competitors and know when to engage in competitive actions. In essence, control capability is the firm's ability to be aware, motivated and able to capitalize upon opportunities or respond effectively to competitive challenges (Chen, 1996). *Ceteris paribus*, when a firm has the capability to recognize and act during critical competitive conditions, performance is likely to be higher. Bundling the resources to create control capabilities is important for the success of the firm, and the created control capability is representative of this.

Third, a managerial capability has a significant negative effect on performance. These results did not support arguments that as teams add new players to the team, the performance should improve. However, interpreting these results has logic on a broader scale. A restructuring of an organization tends to have negative effects in the short term (Levinthal & March, 1993). Because the analyses focused on capabilities' effect upon performance for the current year, these results make logical and theoretical sense. Within a firm, when management restructures by adding and/or removing significant resources of the firm, immediate positive results should not be expected. Additional time is needed to integrate new resources, develop or refine firm culture, and determine the appropriate capabilities necessary to implement the strategies. Therefore, time and the managerial capability are necessary for the firm to utilize the new resources and structure to help it improve performance. This supports Levinthal and March's (1993) assertions that restructuring of an organization tends to have negative effects in the short term. Future

studies can incorporate lagged managerial capability variables to examine their impact upon future performance.<sup>9</sup>

### **Mediating influence of leveraging strategy**

The findings from this study also provide an intriguing view of the role of strategies as mediators of the capability-performance relationship. A major untested assumption within the resource orchestration literature stream is that leveraging strategies mediate the capability-performance relationship. A similar expectation is put forth by Ndofor and colleagues' (2011) resources-to-actions model, but the relationships between capabilities-to-strategies-to-performance have yet to be theoretically or empirically examined and supported. In Sirmon and colleagues' (2007) theoretical resource management model, as well as in the revised resource orchestration model (Sirmon et al., 2011), leveraging strategies are shown to mediate the relationship between capabilities and value creation—and value can be measured by firm performance (Adner & Kapoor, 2010; Drnevich & Kriauciunas, 2011). Until now, this mediating role of leveraging strategy has not been tested. Support for the mediating relationships suggests that two capabilities (scoring and control) and three strategies (conservative and aggressive) are necessary antecedents of higher performance.

First, increasing the firm's control capability helps the firm deploy a conservative strategy to enhance performance. Put another way, a conservative strategy more effectively utilizes the control capability to improve performance. When a firm deploys a

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<sup>9</sup>As mentioned in the methods section, two lagged salary variables loaded to create a managerial capability. These variables were lagged for only one year—to examine the impact of added players upon short-term deployment of strategies and performance.

conservative strategy, it is able to capitalize upon its capability to recognize and act during critical competitive circumstances. Thus, a control capability is used to implement (deploy) a conservative strategy to positively affect performance.

Second, increasing the firm's control capability helps the firm deploy an aggressive strategy to enhance performance. In other words, the aggressive strategy more effectively utilizes control capability to achieve a higher performance. When a firm deploys an aggressive strategy that creates opportunities to generate rent, it is more apt to capitalize upon its capability to recognize and act during critical competitive circumstances. Thus, a control capability is used to implement (deploy) an aggressive strategy to positively affect performance.

Third, increasing the firm's scoring capability helps the firm deploy an aggressive strategy to enhance performance. In other words, an aggressive strategy effectively utilizes scoring capability to improve performance. When a firm deploys an aggressive strategy, it is able to capitalize upon its rent generating capability by utilizing multiple product and/or service offerings to generate rent and create, maintain, and/or sustain a competitive advantage. Therefore, when the firm deploys an aggressive strategy, it will effectively utilize the several sources available (i.e., products and/or services) in a scoring capability to positively affect performance. In addition, since both scoring and control capabilities can be used to help implement this strategy, the firm possesses multiple means for being aggressive in the marketplace.

Thus, this research clarifies the leveraging process by identifying specific capabilities and strategies and tests the mediating relationship to support and contribute

to the validity of the resource orchestration model. I find that firm-level capabilities affect leveraging strategy and performance and the leveraging strategy positively mediates the capability-performance relationship at the team (core business) level.

### **Limitations and Future Research**

Similar to most research, this study has limitations, many of which provide direction and opportunities for future research.

#### **Capability configurations**

Scholars maintain that configurations are the best sources for developing a competitive advantage, and that without them, decisions, resources, and capabilities exhibit less coherence or consistency over time (Inkpen & Choudhury, 1995; Khandwalla, 1973; Miller, 1996). Khandwalla states that configurations are “likely to be a more potent determinant of [the firm’s] effectiveness than any of [its] individual components” (1973: 493). This study draws upon configuration theory to determine the configurations necessary to deploy leveraging strategies and improve performance. The theoretical arguments apply configuration theory to the RBV, which adds a theoretical richness and depth to both theories. However, my theoretical arguments and hypotheses pertaining to configuration theory within resource orchestration were not supported utilizing the sample collected from the NBA. Specifically, I did not find that unique configurations are composed of an idiosyncratic set of capabilities.

The sample used made it difficult to identify capability configurations. Though the sample does contain a significant amount of rich data, it is only at the team level.

These data provide opportunities to identify team capabilities and the operational strategies necessary to take advantage of the capabilities, but they do not provide enough information to analyze the proposed theoretical tenants regarding organization-level configurations. Indeed, the organization must have multiple other types of capabilities to gain a competitive advantage.

Nevertheless, the mediation results provide an opportunity to extend the results to potentially understand configurations within a firm. Perhaps the combination of strategy and capabilities more appropriately inform the theoretical arguments described regarding capability configurations. Instead of a configuration being composed of different capabilities, a more accurate approach could be to argue that a firm-level configuration is composed of capabilities *and* strategies. In essence, the resultant mediating relationships could be more demonstrative of configurations.

For instance, a conservative strategy mediating the control capability-performance relationship may be more indicative of the theoretically described maintaining configuration. Stated differently, a maintaining configuration may be composed of a control capability and conservative strategy. Further, it could be argued that the conservative strategy is more closely aligned with the resource advantage leveraging strategy. A firm utilizing its control capability to deploy a resource advantage strategy may maintain its current position in the marketplace.

Likewise, an aggressive strategy mediating the control capability-performance relationship may be more indicative of the theoretically described extending configuration. Thus, an extending configuration would be composed of a control



capability and aggressive strategy. Further, it could be argued that the aggressive strategy is more closely aligned with the entrepreneurial strategy. A firm utilizing its control capability to deploy an entrepreneurial strategy may hold a competitive position in the marketplace, but more may be needed for the firm to take a leap forward and compete against superior rivals.

Finally, an aggressive strategy mediating the scoring capability-performance relationship may be more indicative of the theoretically described transforming configuration. The transforming configuration would be composed of a scoring capability and aggressive strategy. Thus, the theoretical arguments may be best explained by stating that a transforming configuration is composed of a scoring capability and aggressive (entrepreneurial) strategy. This argument would be consistent with performance relative to competitors indicated in **TABLE 2**—specifically as it relates to the high performers that stay ahead of the competition through a transforming configuration.

In sum, Miller's (1996) untested assertion that configurations can be applied within the organization may exist by applying combinations of capabilities and leveraging strategies. Future research on this subject may illuminate the interconnections of capabilities and strategies and the importance of creating capability-strategy configurations. As mentioned, one of the results of the empirical testing was three different capability-strategy combinations: control-conservative, control-aggressive, and scoring-aggressive. These results may demonstrate the existence of configurations, and the combination properties align closely with the theoretical definitions of maintaining,

extending, and transforming configurations, respectively. By examining these tenants further, scholars may more confidently understand the leveraging strategy process by suggesting that “configuration, in this sense, can be defined as the degree to which an organization’s elements are orchestrated and connected” (Miller, 1996: 509).

### **Contextual factors**

This study did not take into account contextual factors that may affect the capability-strategy configuration to performance relationship. To fully develop theory and meaning related to the different types of relationships, scholars should follow Meyer et al.’s (1993) recommendation to consider contextual factors applicable to configurations. Sirmon et al. (2007) also recommend the use of contextual factors and included them in their model of resource orchestration. External environmental contexts (e.g. environmental munificence, environmental dynamism, etc.), competitive contexts (e.g., industry rivalry, market proximity, etc.) and organization contexts (e.g., size, age, and performance) are examples of circumstances that could affect the coordination of capabilities, configurations, and strategies (Baker & Cullen, 1993). Specifically, future research may focus attention on the firm’s market position and its effect upon the predictor, mediator, and outcome variables (Young, Smith, Grimm, & Simon, 2000). Three potential market positions that could be considered are market leader, market follower, and market laggard.

A market leader with high performance relative to competitors may utilize different capabilities and leveraging strategies by comparison to a market follower with adequate performance (Wernerfelt, 1995). A market follower could be referred to as a

second-best (Wernerfelt, 1995) or a “next best” (Madhok, Li, & Priem, 2010) competitor. A market laggard with declining and/or poor performance relative to competitors may utilize different capabilities and strategies in comparison to a market leader or market follower. These three market positions relative to competitors may be important contextual variables for determining the appropriate configurations to develop. Therefore, in future studies, market position could be used to moderate either the capability-strategy relationship or the strategy-performance relationship. This moderated mediation treatment effect of the capability independent variable on the performance outcome variable via a mediator strategy variable may differ depending on levels of a market position moderator. For example, at the end of the 2013 NBA season, the Miami Heat won their second championship in two years. During the 2013-2014 off-season and season, the Miami Heat, or the market leaders, may coordinate capability configurations very differently by comparison to market followers (e.g., the Oklahoma City Thunder). Similarly, the Boston Celtics (market laggards) have seen continual declines in win-loss record and playoff performance and, therefore, may integrate capability configurations differently compared to the Miami Heat or the Oklahoma City Thunder.<sup>10</sup>

### **Dyadic competition**

A season-level sample may not adequately capture the effects of firm resources and their management. Future research could explore relationships on a dyadic, game-by-game level. To do so, the established seasonal measures from this study would be

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<sup>10</sup> For simplicity, theoretical tenants and hypotheses pertaining to market position are not included in the main body of this research study. However, previous iterations of this work included them. For this reason, I have attached the previous market-position arguments as reference in the Appendix.

assigned to each team for each game of the season. Then, the dyadic competitions would be compared and tested. Teams that fit the appropriate capability-strategy combination (i.e., high in control-conservative, high in control-aggressive, or high in scoring-aggressive) may perform better than those teams that do not fit those specifications. In essence, those teams that fit the configuration should win the games. This approach would be similar to Sirmon and colleagues (2008) that used dyadic competitions in Major League Baseball to test theory regarding the effects of rivals' comparative resource stocks and managers' bundling and deployment actions on competitive outcomes. Comparing teams that fit and do not fit the configurations would test if superior resources matched with strategy out-perform inferior resources matched with strategy. Additionally, future research could test dyadic competitions between teams that fit one configuration and teams that fit another configuration. Testing the different capability-strategy configurations against each other may yield additional insight into which strategies are more beneficial to the success of a team. For instance, scholars could discover if a team with a scoring-entrepreneurial configuration performs better than a team with a control-resource advantage configuration.

Future research could also examine long-term performance implications both dyadic and team-level competition. As mentioned above, this study focuses on the short-term relationships between capabilities, strategies, and performance. Future research should examine the long-term effects of these relationships.

## **Theory**

The theoretical tenants addressed in **FIGURE 2**, like those described in the resource orchestration model (Sirmon et al., 2007), may be expanded upon and examined in future research studies (Mihalache et al., 2012; Ndofor et al., 2011; Sirmon et al., 2008; Sirmon & Hitt, 2009; Sirmon et al., 2010). Research should examine specific aspects of the model. Additional inquiries into types of capabilities may yield insight as to how physical, human, and intellectual capitals are bundled to create idiosyncratic capabilities. In addition, multiple types and combinations of configurations may be present in the firm and may yield differing results, which would greatly enrich the resource-based view of the firm and configurations theory.

## **Generalizability**

This study's selected sample has some idiosyncratic features that might make generalization of the results in other settings difficult. As a consequence, claims for empirical generality for the reported results are challenging. Unlike the NBA, few industries have detailed records and figures available for each resource within the firm—resulting in observable indicators for the types of capabilities created and strategies used. On the one hand, this could be perceived as limiting the generalizability of the findings. On the other hand, the sample allows for a way to distinguish between capabilities and strategies to provide a clean test of the arguments.

To correct for issues with generalizability, future studies should supplement the player-statistics with firm-level and/or external environment data. Ertug and Castellucci (2013) used ticket revenues as a proxy for firm revenue. Further, other streams of

revenues, such as sales revenues, could be included as a measure of performance. Factoring in other firm-level results and decisions will improve the generalizability of the results. For instance, financial decisions regarding a firm, both in terms of talent hired and mergers and/or acquisitions may have an impact on the configurations created and strategies deployed to generate returns for the firm. In addition, research could incorporate external factors such as investor expectations for the firm which could function as a predictor variable influencing configurations and strategies. For sports samples, the Las Vegas sports betting lines may be good proxies for investor expectations.

### **Conclusion**

This research endeavored to increase our understanding of bundled capabilities, on the process of capability configuration, and on the relationship among capabilities, configurations and leveraging strategy necessary to improve performance. The study focused on the mediating role of leveraging strategy in the capability-performance relationship. My approach addresses several gaps in current theoretical approaches, especially those that pertain to the measurement and effects of leveraging strategies highlighted in prior work on resource orchestration. The results of this research allow scholars to more effectively study all of the steps in resource orchestration and determine why some firms are able to compete more effectively than others in the marketplace. This research also opens promising opportunities for future research on configurations as they apply to the resource-based view of the firm.

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## APPENDIX

### Potential theoretical development and hypotheses for market position

#### Market leader

A market leader is in a unique position to capitalize on its existing capabilities to continue momentum with MC configurations (D'Aveni, Dagnino, & Smith, 2010). MC configurations are formed from stabilized capabilities that are changed on an incremental basis to maintain an existing performance level. Market leaders maintain a consistently high performance level, and, therefore, should combine existing capabilities into MC configurations that are used to deploy a resource advantage strategy. When market leaders use MC configurations to deploy a resource advantage strategy, they continue to search for ways to maintain their competitive advantage. If a market follower were to do coordinate the same configurations to improve performance, they would not have the resources necessary “catch up” to the market leaders and take advantage of the leader’s weakness. The same would be the case for market laggards. Market leaders, therefore, have the correct market position to benefit most from MC configurations. As an example, the Miami Heat, the 2012 NBA Champions, used their capabilities to “stay the course” by coordinating existing capabilities to create an MC configuration in order to remain the market leaders. As a result, they won a second NBA title in 2013. Therefore, a position of market leader positively moderates the relationship between the capability/strategy match and performance. Stated formally:

Hypothesis 1: A market leader moderates the mediated relationship between MC configurations, resource advantage strategies, and performance such that the positive mediated relationship will be stronger when the firm has a market leader position.

## **Market follower**

The contextual factor of market position also influences the relationship between EC configurations, the market opportunity strategy, and performance. Just as is the case with MC configurations, the firm's context in the market place is an important "starting point". As described, a market follower is characterized as a firm that is a second-best (Wernerfelt, 1995) or a "next best" (Madhok et al., 2010) competitor. This firm has performed sufficiently well in the past, but, in order to keep up with the market demand and superior market leaders, it must make necessary changes to meet market requirements.

EC configurations are formed from at least one pioneered capability and three supporting enriched or stabilized capabilities that are integrated to operate in concert to improve performance. The market follower's performance needs improvement and should coordinate these capabilities into EC configurations to deploy a market opportunity strategy. When market followers use EC configurations to deploy a market opportunity strategy, they have the ability to scan the market conditions, identify areas representing opportunities for exploitation, and capitalize upon those areas to catch up with and surpass the market leader. If a market laggard were to coordinate the same configurations toward the same ends, it would not have the performance necessary to drastically improve and become a significant player in the competitive environment. Market followers, therefore, have the correct market position to benefit most from EC configurations. For example, Green Mountain Coffee Roasters is a market follower (behind Starbucks) in the retail coffee market. In 2010, Green Mountain acquired Van



Houtte Inc., a coffee company in Canada that processes, distributes, and sells coffee, in order to “build out a North American infrastructure and to support all of [its] customers both in the home side of the business, through retailers, and the grocery or office coffee customers” (LaSalle, 2010). This purchase increased Green Mountain position in the marketplace and helped it to “keep up” with Starbucks (the market leader). The acquisition was a pioneered functional capability and, in order to become an extending configuration, Green Mountain supported the new capability by enriching its structural, adaptive, and developmental capabilities. The acquisition was the starting point. Time will tell if Green Mountain successfully coordinates an EC configuration.

In sum, when a firm is a market follower, the best fit for its configurations and strategy would be a match between EC configurations and the market opportunity strategy. Stated formally:

Hypothesis 2: A market follower moderates the mediated relationship between EC configurations, market opportunity strategies, and performance such that the positive mediated relationship will be stronger when the firm has a market follower position.

### **Market laggard**

Market position influences the relationship between TC configurations, the entrepreneurial strategy, and firm performance. Just as is the case with MC and EC configurations, the firm’s context in the market place is an important “starting point”. A market laggard is a firm characterized as a poor performer or one that has experienced declining performance over time. Here, the “underperforming firm is often unable to catch up with its rival for relatively extended periods of time, despite its potentially

powerful capabilities of experimentation and imitation” (Zott, 2003). Indeed, the potential is there for the firm to do well, but the capabilities are not strong enough and/or the configurations are not working in concert.

TC configurations are formed from four pioneered capabilities that are configured together in concert to improve performance. The market laggard’s performance needs significant improvement and should coordinate these capabilities into TC configurations to deploy an entrepreneurial strategy. When a market laggard uses TC configurations to deploy an entrepreneurial strategy, it will scan the market conditions and identify numerous areas within the firm that are impeding it from progressing in the appropriate direction. If a market leader or market follower were to coordinate the same configurations toward the same ends, they would be doing too much and creating too much complexity for an unnecessary strategy. Indeed, such firms demonstrate that they have yet to learn to work efficiently, and inappropriate change can disrupt firm operations, creating more tasks that are less beneficial to the firm (Chang & Wu, forthcoming; Haley, 1986). For example, on July 11, 2013, Microsoft announced plans to realign its businesses. Consumer and business spending trends, as well as the growth of tablet computing have made the software giant less competitive in the marketplace in terms of momentum and future financial outlook. The massive costs of maintaining a business structure combined a less than effective new branding campaign and slumping sales have pushed Microsoft to reconsider the structural aspects of its business. Microsoft should to bundle its abundant cash reserves and resources to create pioneered capabilities to improve its reputation and financial trajectory. By doing so, the firm will

be more apt to improve its market position to become a relevant force in the technology industry. As a result, Microsoft is now moving toward “One Microsoft”, which is an effort to strip away a “structure based around divisions overseeing particular products. In its place, Microsoft is imposing a horizontal scheme with managers that oversee different kinds of functions—like engineering, marketing and finance—that would be applied to multiple product lines” (Ovide & Clark, 2013). In order to restructure one of the largest organizations in the world, the firm will need to coordinate TC configurations composed of pioneered capabilities. Doing so will improve the performance of the firm.

Hypothesis 3: A market laggard moderates the mediated relationship between TC configurations, entrepreneurial strategies, and performance such that the positive mediated relationship will be stronger when the firm has a market laggard position.

Long-time market leaders may also benefit from creating TC configurations. A market leader with a long tenure tends to create core rigidities and inefficient institutional norms and behaviors. As a result, performance may begin to slide, giving competitors an opportunity to capitalize on the leader’s “lethargy”. Therefore, on the other end of the continuum, a long-established market leader should create TC configurations in order to stay ahead of competitors to sustain its competitive advantage.

Hypothesis 4: A long-time market leader moderates the mediated relationship between TC configurations, entrepreneurial strategies, and performance such that the positive mediated relationship will be stronger when the firm has had a long-term market leader position.

**Measure: Potential moderating variable**

**Market position.** Market position can be measured by examining the firms overall position in the NBA League Standings at the end of the regular season. Each team is ranked by conference at the end of the season: 1 for best record and 15 for worst record. This continuous rank variable can be used, in conjunction with a dummy conference variable (Eastern conference=1 to control for conference) as the moderating variable.