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A Comparative Analysis of Private Sector and Federal Government Leadership Competencies and Organization Performance

June 2018

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ABSTRACT

As the world becomes more complex and evolves at faster rates, it has become imperative that organizations evolve their leadership training to adapt to the ever-changing industrial environment and maintain the organization's competitive advantage. For example, the Department of the Navy has called for cultural changes and programmatic improvements to the way the civilian workforce is prepared for leadership roles and responsibilities. Patricia Ingraham, Heather Getha-Taylor, and the National Academy of Public Administration have conducted studies that identified the current level of training and developing civilian leadership is ineffective within the federal government regarding organizational requirements in an exponentially changing complex environment. If the current approach to leadership development is insufficient, an important question to study is, "What leadership capabilities, qualities and competencies contribute to effective leadership and organizational effectiveness in complex environments of defense acquisition?" By answering this question, we hope to offer suggestions and recommendations to improve leadership development in the Navy Civilian Acquisition Workforce.



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constantly remain at the forefront of defense technology is the foundation of the U.S. armed forces. We hope that the contributions and recommendations from our project will allow the DoD civilian workforce community to remain at the top of their industry.





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Disclaimer: The views represented in this report are those of the author and do not reflect the official policy position of the Navy, the Department of Defense, or the federal government.



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LIST OF ACRONYMS AND ABBREVIATIONS

CLT	Complexity Leadership Theory
CMO	Chief Management Officer
CNO	Chief of Naval Operations
DCLEP	Defense Civilian Emerging Leader Program
DoD	Department of Defense
DSLDP	Defense Senior Leadership Development Program
ELDP	Executive Leadership Development Program
EO	Entrepreneurial Orientation
GS	General Schedule
NCAW	Navy Civilian Acquisition Workforce
NCW	Navy Civilian Workforce
NDAA	National Defense Appropriations Act
OSC	Organizational Social Capital
SES	Senior Executive Service
USD(A&S)	Under Secretary of Defense (Acquisition and Sustainment)
USD(R&E)	Under Secretary of Defense (Research and Engineering)



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I. INTRODUCTION

The National Defense Appropriation Act (NDAA) for Fiscal Year 2017 contains a provision in Section 901 that mandates the restructuring of the Department of Defense (DoD) acquisition, technology, and logistics organization to function more like a business in the private sector (Kadish et al., 2005). The restructuring will “establish an Under Secretary of Defense (Research and Engineering) (USD(R&E)), an Under Secretary of Defense (Acquisition and Sustainment) (USD(A&S)), and a Chief Management Officer (CMO) within the DoD,” and authorization is provided to streamline the acquisition organization, placing “greater responsibility and accountability with the services for program execution and performance” (Department of Defense [DoD], 2017, p. 3). The purpose of the restructuring is to maintain the warfighting capability competitive advantage that the United States has enjoyed for decades by providing weapon systems to the warfighter which are technically superior, while implementing well managed business practices to keep new technology affordable. The intent is to control the costs in order to mitigate the risk presented to the acquisition and life cycle sustainment of major weapon systems.

The expectation is that USD(R&E) will be allowed to take risks to develop innovated technology and be provided the license to fail in cutting-edge pursuits. USD(A&S) will seek to control costs and provide timely delivery of product and sustainment while mitigating risk. Seams between organizations with objectives which are diametrically opposed will create tension, which will require skillful senior management. The CMO will focus on improved quality and productivity and shifting to DoD-wide alignment to reduce costs of business operations and increase leverage in the marketplace.

Though strides have been made in regards to technological innovation, the ability to evolve at the rapid pace required in today’s industrial environment has remained stagnant. In the private sector, firms are beginning to look at various aspects within their organizations to find avenues for competitive advantage. Leaders within a firm must seek to balance their organization’s ability to function, while also looking to innovate and expand their scope. The DoD, with the various ebbs and flows of international relations, must be ready to adapt to the ever-changing defense environment, and it must do so in a similar fashion to private sector

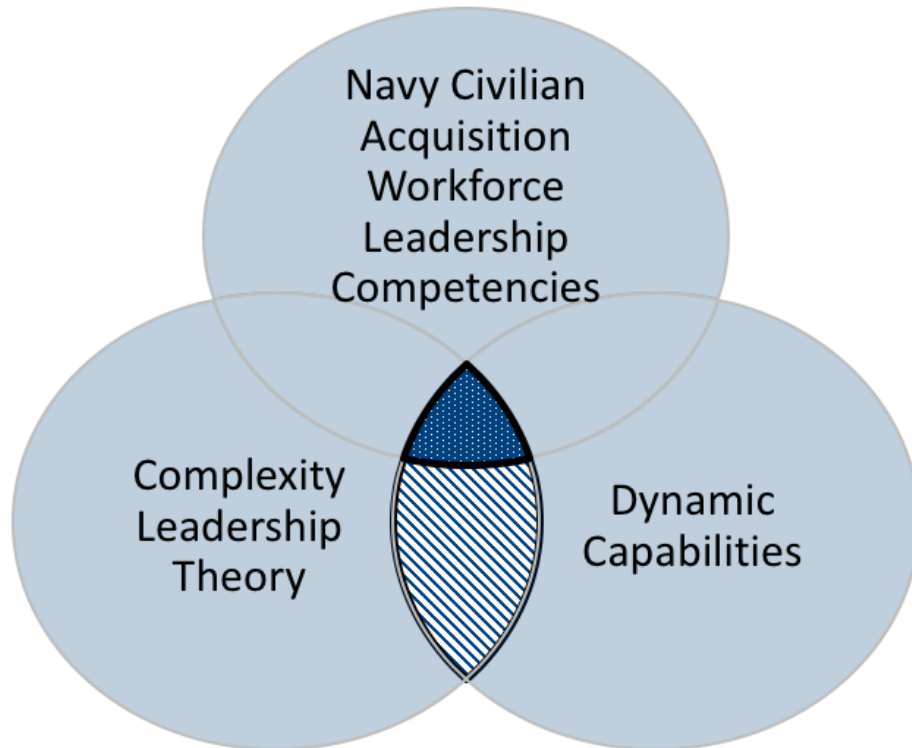


firms facing similar challenges within their given industries. On one hand, the DoD must look to create and develop its own capabilities, in the form of knowledge and technology, in order to combat the growing threat of competition among the wide range of military actors. On the other hand, the DoD must also look to develop its leaders, and train them to foster an environment in which employees feel that they can directly contribute to innovation. The objective of this report, which we visually describe with Figure 1, is to determine which lessons learned through research on the use of dynamic capabilities and complexity leadership theory (CLT) in firms can be applied to the acquisition workforce in the federal government.

Dynamic capability is an organization's ability to structure and restructure resources in response to external or internal opportunities or pressures (Augier & Teece, 2006). This is due to changes in the environment, whether the change is related to evolving technology or economic shifts in the market. The ability to adapt internal and external firm-specific competencies to take advantage of opportunities and maintain competitive advantage is closely tied to dynamic capabilities. This is done through proactively restructuring assets or routines in new ways to facilitate the flow of knowledge in order to take advantage of economic or technological opportunities (Augier & Teece, 2006).

CLT focuses on social capital and its effect on the flow of knowledge throughout organizations. Two of the primary components of social capital are group cohesion and brokerage. *Group cohesion* refers to the extent of which individuals within a group are connected, while *brokerage* is the connection among groups through what is known as bridge connections. These brokers facilitate the flow of information among groups and throughout an organization. Organizational structure consists of two systems that exist in an environment of tension. The operational system seeks order, standardization, and business performance, while the entrepreneurial system strives for innovation, learning, and growth. Between these two ends of the spectrum lies adaptive space, where innovation and adaptability are driven through the dynamic tension present (Arena & Uhl-Bien, 2016).





The ability to integrate these three entities is the recommended solution.

Figure 1. The Overlap of Complexity Leadership Theory, Dynamic Capabilities and the DoD Civilian Acquisition Workforce.

The DoD acquisition process has long been criticized because of its frequent cost overruns on major acquisition programs, failure to meet scheduled delivery of capabilities, and lack of responsiveness to meet the needs of the warfighter in a dynamic security environment. As a result, Congress and senior leadership within the services have lost confidence in the current process (Kadish et al., 2005). The general public has also grown frustrated with cost overruns amounting to billions of dollars in major programs such as the F-35 Lightning Joint Strike Fighter (Capaccio, 2017). The restructuring called for in the NDAA presents an opportunity to adapt the current acquisition workforce through the lens of dynamic capabilities and CLT to foster an environment in which knowledge flows more freely by breaking down barriers. These barriers created silos between the generation of requirements, the budgeting process, and the development and acquisition of cutting-edge technology needed by the military to maintain a competitive advantage in an environment where near-peer competitors are increasingly closing the technology gap, visualized in Figure 2.

The acquisition system was developed with the objective of the overlap between the three silos previously discussed: budgeting, requirement generation, and the acquisition process which addresses capability gaps identified by the services. In Dr. Stephen Trainor's (2017) report on the DoD acquisition workforce, he determined that differences in values of the three sub-organizations of the acquisition system has led to an environment in which self-preservation is prioritized over a collaborative effort to efficiently deliver innovative products to the DoD. Each of the sub-organizations is inextricably linked in a relationship where a decision in one area may have a detrimental impact on another sub-organization. For example, the military requests that a developmental program, which is on contract and in prototyping, provides an enhanced capability not originally requested. Although not part of the initial requirements included in the contract, this improvement could be necessary to counter a newly discovered adversary capability. This change in requirements made by the military adversely influences the acquisition process in terms of cost, performance and schedule. The change will have consequences in the budgeting process as well. Congress will need to decide whether to fund the improvements by either shifting funds from another program in the current fiscal year or extending program delivery out over a longer period to distribute the cost. The tension fostered by differing values, as displayed in Figure 2, helps explain many of the difficulties and inefficiencies that all stakeholders in the acquisition system suffer from. Trainor (2017) further surmises that this tension may foster an environment where the application of dynamic capabilities and CLT could provide value to DoD.



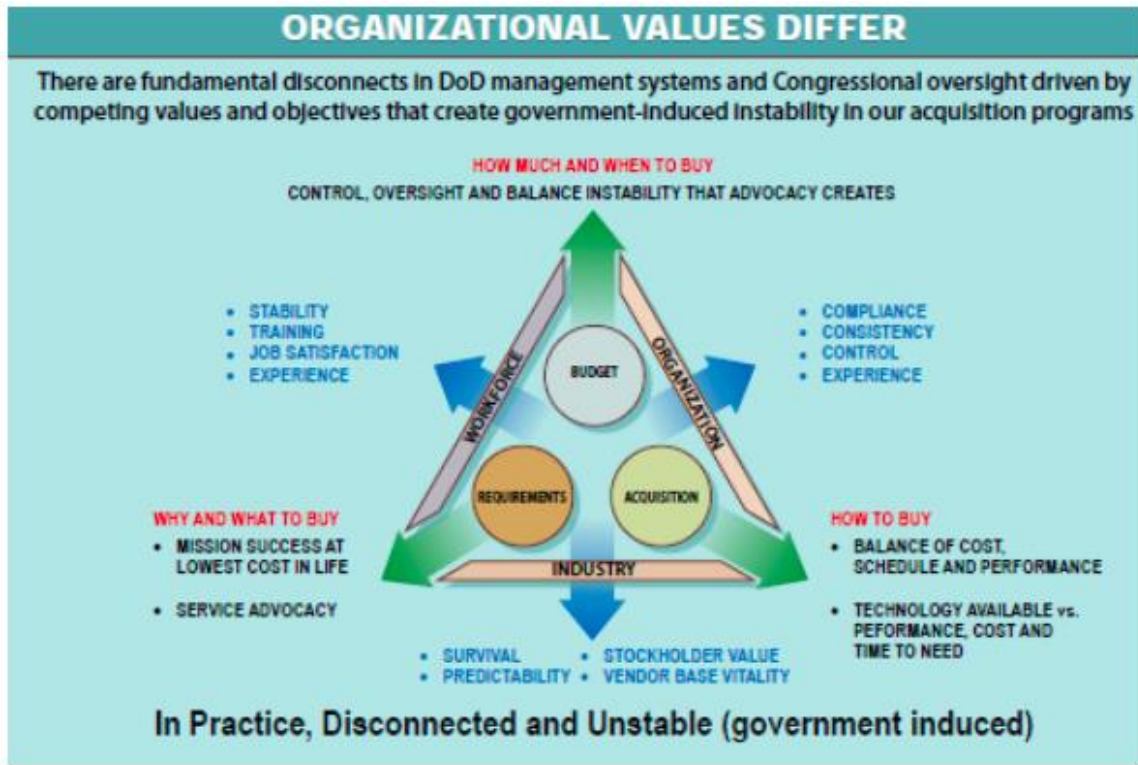


Figure 2. Divergent forces in Defense Acquisition.
Source: Defense Acquisition Performance Assessment Project (2006, p. 4)

The DoD Civilian Leader Development Continuum details the desired skills and traits from an entry-level government civilian, up through the SES positions (see Figure 3). Entry-level employees are expected possess basic skills and demonstrate qualities such as honesty, flexibility, and resilience with a desire for continual learning and growth. As employees advance throughout their careers, they will be expected to take on ever-greater roles of leadership, beginning with taking the lead of a group or on a project. The DoD has established programs to groom civilian employees for roles of increasing leadership within their respective organizations. There are three primary programs that fall under the DoD-Wide Civilian Leader Development Programs (“Leader Development,” 2018).

The Defense Senior Leadership Development Program (DSLDP) was established in 2008 with the objective of preparing employees at General Schedule (GS) grades 14 and 15 for Senior Executive Service (SES) positions (DoD, 2009). Participants in the program are nominated through their DoD component’s talent management system. Nominees for the program are primarily leading high-performing organizations and demonstrate potential to

excel in leading larger organizations. Training focuses on an enterprise-wide perspective necessary to lead joint, interagency, or multinational organizations and includes senior-level military education, defense-focused military seminars, and individual development assignments to fill identified competency gaps. Successful leadership of an organization is one of the key criteria for consideration as a nominee for DSLDP, where the employee would be groomed for an SES position and possibly a role leading an institution. Big picture concepts such as strategic thinking, global perspective, and an understanding of the National Security Strategy are required at this echelon.

The DoD Executive Leadership Development Program (ELDP) was established in 1985 and is targeted at GS grades 12 through 14. The objective of the program is to provide civilian employees exposure to roles and missions across the DoD. This is accomplished over the course of 10 months in which the participant travels to locations both within the United States and abroad to train alongside service members to provide a better understanding of the challenges faced in the execution of their mission (DoD, 2009).

The Defense Civilian Emerging Leader Program (DCELP) was established in 2011 to provide leadership training to government civilians grades 7 through 12 (Rude, 2012). Training consists of four one-week resident courses that focus on five terminal learning objectives of know self, express self, build teams, manage organizations, and understand the DoD (“Leader Development,” 2018).





Figure 3. DoD Civilian Leader Development Continuum.
Source: “Leader Development” (2018).

Comprehensive research was conducted using aspects of a systematic review and comparative analysis of available literature. A systematic review provides a framework for developing topics, conducting research, organizing results and setting the foundation for analysis (Jesson & Lacey, 2011). A comparative analysis takes various subjects of interest and compiles a list of similarities and differences, all within the context of the research topic (Walk, n.d.). By utilizing these two research methods, we analyzed various private sector industries within the context of leadership and managerial capabilities and compared the results to underlying problems within the DoD civilian acquisition framework.

The concepts incorporated in dynamic capabilities and CLT present a relatively new approach to the idea of knowledge cultivation and capability building. Due the recent development of these theories, examples of firms’ intentional implementation are not available, but the concepts can be identified in current managerial practices. The aim of this study is to identify instances in which firms practice these concepts and evaluate how they might provide value to the Navy civilian acquisition workforce.

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II. BACKGROUND RESEARCH

A. COMPLEXITY LEADERSHIP THEORY

With the ever-changing industrial environment, firms are constantly looking for the upper hand over their competitors. While there is merit in perfecting niches, in order to achieve or maintain a competitive advantage firms must adapt to the industrial environment. For firms to achieve adaptability, it is necessary for change within the firm. CLT hypothesizes that a firm's performance and innovation is enhanced by adaptability, and the ability to adapt is driven by everyday actions by employees (Arena & Uhl-Bien, 2016). Furthermore, it is the leadership's responsibility to foster the appropriate environment for encouraging interactions between employees. Various firms rely on bureaucracy to define specific roles and decrease interaction between different levels of employees in order to reduce tension or conflict within a firm. However, conflict can be seen as opportunity for a firm to grow and adapt to internal and external pressures within its industry.

Historically, organizations have placed focus on a strictly hierarchical structure. Leader responsibilities and expectations were designed to meet the needs for organizations, which placed emphasis on this structure. A bureaucratically structured organization delineates static roles among individuals, fostering an environment for the separation of the individuals and lack of social interaction. The onus was on leadership to identify talent, either within a company or by bringing on talent, to ensure the company was filled with subject matter experts who do their job well. This created an environment in which individuals were more likely concerned with developing their individual proficiencies and theoretically would lead to increased productivity. Firms developed practices that focused primarily on human capital in regards to improving industry standing. Human capital is mainly focused on the performance of individuals and the economic value they provide to the firm (Arena & Uhl-Bien, 2016). By focusing on human capital, firms placed high value on individual performance in order to measure success. However, this method of encouraging company growth can be seen as overly simplistic (Lichtenstein et al., 2006).

While the qualification and skills of individuals being hired is important, many believe that it is not enough to meet the continuously evolving challenges of industry. In



addition to a focus on human capital, firms must consider the idea of social capital. Arena and Uhl-Bien (2016) refer to social capital as “the competitive advantage that is created based on the way an individual is connected to others” (p. 22). Social capital can further be described in two aspects: group cohesion and brokerage (Arena & Uhl-Bien, 2016). Group cohesion is measured by connection between individuals within the same group. Brokerage is measured by how different groups are connected with each other. By viewing the organization within these two scopes, firms gain a better sense of understanding of the climate of interactions between several groups or clusters within the firm itself. Clusters of individuals should be highly interconnected, consisting of many interactions and cross-interactions. The challenge in this is not only to create a thriving cluster, but to create an interactive environment across all clusters in the whole organization. By developing an interconnected organization, relationships within the firm help increase the level of efficiency and innovativeness (Arena & Uhl-Bien, 2016).

Within the framework of CLT, firms are organized into two systems: an operational system and an entrepreneurial system (Arena & Uhl-Bien, 2016). The operational system is the process aspect of the firm, including standard business practices. The entrepreneurial system is the innovation side of the firm, which includes the ability for the firm to learn and grow. These two systems are used to categorize various interactions within a firm. Delineating the roles and responsibilities of individuals within the firm will develop and enhance practices within an appropriate framework related to their position. Leadership’s role in improving their firm is to manage the conflict between individuals and groups within the scope of the entrepreneurial system, creating new ideas that have been appropriately vetted through different frames of mind. The thought behind this idea is that the operational and entrepreneurial systems of a firm are inherently conflicted. The role of the leader is not to discourage this tension; rather, it is to embrace it in a way to drive productivity. The tension between these systems can be identified as *adaptive space* (Arena & Uhl-Bien, 2016). This implies that the tension between the entrepreneurial system and operational system is where the firm can enhance its adaptability.

Another way of viewing the operational and entrepreneurial systems is the idea of exploitation and exploration (Uhl-Bien, 2018). Exploitation can be compared to the organizational system; the use of existing knowledge or technology in order to produce



success (March, 1991). Exploration can be compared the entrepreneurial system; to create new knowledge or skills in order to generate success (March, 1991). Both of these are tied closely to the importance of organizations' ambidexterity. Organizations that are ambidextrous in nature have the ability to use both exploration and exploitation concurrently in order to maintain company performance standards, while seeking methods to improve and adapt to the surrounding industrial environment (Rosing, Frese, & Bausch, 2011). This thought process, in conjunction with the idea of the leader within the framework of CLT, empowers employees to maintain individual responsibility in aligning action with company strategy and innovation, while placing leaders in facilitator role. In both CLT and dynamic capabilities, the practice of knowledge sharing is an important aspect in order to foster innovation within a firm. Dynamic capabilities are concerned with the content of the knowledge, while CLT is concerned with how that knowledge is shared.

CLT is unique in its thought process because it emphasizes people and relationships within the firm. While firms continue to seek advantages over other firms within the same industry, this theory emphasizes the firm's ability to self-assess its own internal interactions, thus creating solutions. The firm's ability to grow comes from organically developed ideas, which, if adaptive space is appropriately utilized, creates realistic goals and practices for a firm to enact. The internal aspect is extremely important to the feasibility of credible innovation, as well as employee buy-in. Ideas that are developed by a firm's own employees have a greater chance of being enacted properly (Nahapiet & Ghoshal, 1998). This characteristic of CLT is further enhanced by flatter organizational structures. Rather than placing emphasis on a bureaucratically organized structure, firms can benefit greatly from adopting complex adaptive systems (Lichtenstein et al., 2006). In these systems, leaders rely on mediating relationships between various groups within the organization, focusing on improving the quality of interaction, which will initially lead to conflict but in the end will produce ideas that are vetted through various entities within the firm. This increases individual buy-in to company policies or actions because the development process includes a large part of the firm.

Firms should embrace internal and external pressures for the firm to improve performance. These pressures are integral for a firm's development of its adaptive capability. The key for firms in regards to pressure is to use it as an opportunity to self-evaluate and



make the necessary changes to the firm. Leaders are responsible for managing these pressures by creating an environment in which tension is generated, but in a controlled manner. This reduces the leader's responsibility to create change and innovation and gives the leader incentive to encourage employees to internally innovate various processes within the firm. While the focus of the firm is internal in nature, external pressures play a large part in the development of the organization. If the goal for firms is to become adaptive, external pressures will play the largest role in the need for adaptation. Leaders must identify those challenges and utilize complex adaptive systems within the organization in order to translate those external pressures into internal action.

B. DYNAMIC CAPABILITIES

Though various aspects of dynamic capabilities have only recently been identified, there has been an increasing amount of research into the realm of dynamic capabilities. We reviewed interpretations of different research done on the topic, evaluated the changes, and constructed our own assumptions as to how and why dynamic capabilities has evolved through the years.

Teece, Pisano, and Shuen (1997) defined dynamic capabilities as “the firm’s ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments” (p. 516). Integration is seen as coordination of information—whether through sourcing, transferring, or internalizing—to generate competitive advantages (Teece, Pisano, & Shuen, 1997). Building is seen as the means of learning through trial and error, which can lead to new knowledge, routines, or logic (Teece, Pisano, & Shuen, 1997). Lastly, reconfiguration is seen as the management of existing assets and capabilities to engage in changing environments (Teece, Pisano, & Shuen, 1997). Throughout Teece et al. (1997) paper, the importance of duplicating firm capabilities through facsimile and substitution are thoroughly examined.

Eisenhardt and Martin (2000) similarly defined dynamic capabilities as “the firm’s processes that use resources—specifically the processes to integrate, reconfigure, gain, and release resources—to match and even create market change” (p. 1107). Integration includes the pooling of assets and coordination of skills from different parts of the firm to demonstrate



a base for innovation and creation that shape the firm's strategic moves (Eisenhardt & Martin, 2000). Reconfiguration is a function that combines various resources, especially knowledge-based ones, to address a changing environment (Eisenhardt & Martin, 2000). Gain and release of resources both include knowledge creation routines to develop a new thinking within the organization (Eisenhardt & Martin, 2000).

Zahra and George (2002) look into dynamic capabilities through the eyes of absorptive capacity; they characterize the framework as four frameworks of acquisition, assimilation, transformation, and exploitation. Acquisition is the act of detecting and collecting “externally generated knowledge” (Zahra & George, 2002, p. 189). Assimilation is the act of analysis, interpretation, and understanding of the acquired knowledge (Zahra & George, 2002). Transformation is the development of routines that combine previously acquired and assimilated knowledge (Zahra & George, 2002). Lastly, exploitation is the “leveraging of existing competencies” or the creation of new competencies by redeploying acquired and transformed knowledge throughout the firm (Zahra & George, 2002, p. 190). The difference between the incorporation of potential and realized form is that the former includes acquiring and assimilating, whereas the latter includes transforming and exploiting.

Verona and Ravasi (2003) defined three core knowledge-based dynamic capabilities through product innovation as creation and absorption, integration, and reconfiguration. The aspects of creation and absorption best describe a firm's commitment to investing in basic sciences in order to generate and maintain a reputation within the scientific community, whereby the firm could absorb knowledge (Verona & Ravasi, 2003). Integration is the sharing of internal knowledge between different branches or components within a firm (Verona & Ravasi, 2003). Lastly, reconfiguration is the restructuring of the firm to optimize information flow and foster an open culture so as to allow knowledge to flow (Verona & Ravasi, 2003).

Helfat and Peteraf (2003) expanded the means into how the capabilities can change after they have reached maturity, and came up with four divisions—recombination, renewal, redeployment, and replication—that all “provide new opportunities for capability growth or change” (p. 1005). Recombination can be described by the merging of various capabilities to further innovate a firm's own capabilities (Helfat & Peteraf, 2003). Renewal is seen as



seeking for and developing new alternatives or substitutes (Helfat & Peteraf, 2003). Redeployment is seen as creating and implementing existing capabilities into a different but similar product and service (Helfat & Peteraf, 2003). Lastly replication is seen as creating and implementing capabilities from one market into a completely different market (Helfat & Peteraf, 2003).

In Rothaermel and Alexandre's 2009 article, they characterized dynamic capabilities into four different quadrants of a graph, in which they compared the source of knowledge against the source of technology, where the source of technology is the application of knowledge to achieve an objective. Quadrants I and II are the internal and external sourcing of known technology respectively and Quadrants III and IV are the internal and external sourcing of new technology respectively (Rothaermel & Alexandre, 2009).

Zheng, Zhang, Wu, & Du (2011) researched the impacts of dynamic capabilities within networked environments and determined that the framework of dynamic capabilities could be broken down into three categories—acquisition, generation, and combination. Acquisition is seen as “the identification and transfer of knowledge from external sources” (Zheng, Zhang, Wu, & Du, 2011, p. 1038). Generation is seen as the internal creation of new knowledge (Zheng, Zhang, Wu, & Du, 2011). Lastly, combination is the adaptation of current, internal, and known knowledge into new configurations (Zheng, Zhang, Wu, & Du, 2011).

Denford (2013) summarized these seven frameworks within a table, shown in Table 1, in which he displayed the framework categories within dynamic capabilities, the specific definition of dynamic capabilities given in each report, and the key concepts within the research. For the most part, many of the frameworks repeat Teece et al.'s (1997) definition stated previously. The various frameworks use similar concepts such as internal and external sourcing, combination, coordination, and knowledge (Teece, Pisano, & Shuen, 1997). What is interesting is that while they are similar key concepts, they are modified slightly to coincide with the knowledge-based dynamic capabilities specified for each report.



With all of the prior research being very similar in tone but slightly modified to meet the specific theme to the particular report, we envision dynamic capabilities as:

- Building by acquiring new knowledge, typically done within the research and development sector of an organization yet sometimes outsourced.
- Integrating the information within the organization through cohesive internal networking.
- Reconfiguring tangible and intangible assets to maximize capabilities as times, technology, and the economy change.

Historically, the role of managers within traditional economic theory of the firm was minimal in terms of effect on the performance of the firm. Traditionally, the manager was seen as an individual who was responsible for the efficiency of routine events (Baumol, 1968). Another individual who was identified as the entrepreneur would be responsible for innovation and execution of new ideas (Baumol, 1968). The role of managers is less important within this view of the firm, thus emphasizing the performance of employees and events within the operational environment of the industry (Baumol, 1968).

The historical view of the firm, however, has become less relevant with shift from the Industrial Age to the Knowledge Era (Uhl-Bien, Marion, & McKelvey, 2007). The effect of this shift is especially apparent in the roles of leaders and managers within a firm (Uhl-Bien, Marion, & McKelvey, 2007). Specifically, in regards to dynamic capabilities, managers are increasingly more involved in the firm's overall strategy and goal development (Augier & Teece, 2009). Within this framework, managers not only develop routines but also make investment choices and direct asset efficiency and return on innovation (Augier & Teece, 2009). As business organizational structures continue to flatten and evolve, the hierarchical structure that was so common in the past is beginning to fade away over time. The bureaucracy of the past firms resulted in barriers between the formal and entrepreneurial systems, which stunted the firm's growth and ability to adapt to changes within their industries. Presently, firms must embrace the natural conflict between managers and entrepreneurs in order to force adaptation of the firm (Augier & Teece, 2009).



Table 1. Dynamic Capabilities Comparison among Various Authors. Source: Denford (2013, p. 180).

Study Authors	Knowledge-Based Dynamic Capabilities	Dynamic Capabilities Definition	Framework Key Concepts
Teece et al. (1997)	Build Reconfigure Integrate Replicate/imitate	The firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments (p. 516)	Internal or external sourcing Combination/experimentation Coordination/transfer New or existing knowledge Internal or external transfer Combinative processes New or existing knowledge
Eisenhardt & Martin (2000)	Gain Reconfiguration Integration	The firm's processes that use resources—specifically the processes to integrate, reconfigure, gain and release resources—to match and even create market change (p. 1107)	Internal or external transfer Combinative processes New or existing knowledge
Zahra & George (2002)	Transformation Exploitation Acquisition Assimilation	Dynamic Capabilities are geared toward effecting organizational change; they are essentially strategic in nature and, therefore, define the firm's path of evolution and development (p. 188)	Internal/external sourcing Absorptive capacity Combination or transfer Exploitation or innovation
Verona & Ravasi (2003)	Creating Reconfiguring Integrating	The subset of competence/capabilities that allows the firm to create new products and processes and respond to changing market circumstance (Teece et al., 1997, p. 510)	Transfer of latent knowledge Combinative processes Absorptive capacity New or existing knowledge
Helfat & Peteraf (2003)	Recombination Reconfiguring Renewal Replication	The firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments (Teece et al., 1997, p. 516)	Combination or mixing Search and development Redeploying knowledge New or existing knowledge
Rothaermel & Alexandre (2009)	Quadrant I Quadrant II Quadrant III Quadrant IV	The firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments (Teece et al., p. 516)	Internal or external sourcing Absorptive capacity Exploration or exploitation New or existing knowledge
Zheng et al. (2011)	Generation Combination Acquisition	The firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments (Teece et al., p. 516)	Internal or external sourcing Absorptive capacity New or existing knowledge

C. INTEGRATION OF MODELS

Frameworks for CLT and dynamic capabilities have vast implications for the typical view of the firm, especially in regards to the standard managerial and entrepreneurial roles. Advancements in technology have allowed leaders within a firm to look deeply not just at their production, but the relationships within the firm. Dynamic capabilities place great emphasis on the firm's ability to combine the aspects of integration and reconfiguration to create a dynamically evolving firm within an industry (Denford, 2013). CLT promotes the utilization of tension between the operational and entrepreneurial systems within a firm to foster an environment in which innovation is streamlined (Arena & Uhl-Bien, 2016). By using these two frameworks as a baseline for a firm's business structure, the firm will be dynamic among its industry competitors, while also keeping in mind the importance of the formal institutions in place.

In regards specifically to leadership, CLT and dynamic capabilities have placed similar importance on managerial aspects within a firm. In dynamic capabilities, managers fulfill the roles of the traditional manager, as well as the role of entrepreneur. In CLT, managers act as mediators between clusters within the organization and are mainly responsible for encouraging controlled tension between clusters in order to increase innovation within the firm. Leaders within a firm can achieve high levels of success by finding the balance between these two views of managerial duties. Managers should be responsible for the day-to-day operations, as discussed in the traditional view of the firm (Baumol, 1968). The efficiency of daily operations is highly reliant on the competence of the managers responsible for supervising the lowest level employees. While this fact remains, it becomes less important when the organizational structure of the firm becomes less bureaucratic. A flatter organization has the potential to become highly innovative because the barriers between employees are reduced, which contributes to the environment in which CLT is most appropriate (Arena & Uhl-Bien, 2016). Another important aspect of flat organizations is that managerial and entrepreneurial roles need not be filled by one individual; rather the roles are defined and spread out among capable individuals or groups within the firm. It is important to note that CLT does not completely eliminate the organization's need to focus on daily operations and formal business practices; rather, it allows firms to complement the



efficiency of its operations by seeking to utilize opportunities for innovation and combine them with the efficient procedures already in place.

Successful firms in a traditional sense may view their success within their industry and tell themselves, “If it isn’t broken, don’t fix it.” However, the shift from the Industrial Age to the Knowledge Era has significantly affected the ability of firms to promptly react to industry shifts. Technology has reduced the time it takes to complete routine tasks and has allowed firms to spend greater time focusing on innovation and reacting to industry competitors. In many cases, firms that were once powerhouses in their own industry have seen effects on their products due to consumer tastes and technological advancement, and many that have failed to react in time have fallen to other competitors. Although it is important to achieve short-term business goals, firms that do not consistently look for opportunities to innovate will not survive the fast-paced market of the future.



III. METHODOLOGY

In this chapter, we will discuss the methodology that was applied throughout the project. To acquire the data necessary to complete the analysis for the project, we used aspects of both a systematic review and a comparative analysis. A systematic review is an eight-step process, displayed in Table 2, which begins with a scope and is completed by means of a meticulous review of all relevant data to the main research question. Given the time constraints of our project, as well as the highly critical nature of systematic reviews, an abbreviated systematic review was conducted of applicable theoretical literature on dynamic capabilities and complexity leadership theory. In addition to an abbreviated systematic review, we then conducted a comparative analysis of different industries with a focus on top to mid-level management. We researched multiple empirical studies across a wide range of industries in order to develop a sample product of leadership problems and solutions to be utilized as the basis of the comparative analysis. The objective of this methodology was to identify instances in which these theories can be or have been applied to firms, and if so, determine whether these practices can be applied to the federal acquisition community.

The process of conducting a systematic review was discussed in detail, setting the foundation of the project as the framework by which our research was conducted. The first step was the formation of a review question to establish the aim and scope of research (Jesson & Lacey, 2011). Rather than evaluating the broader topic of strategic management, the focus of the research was on CLT and dynamic capabilities. We focused on CLT and dynamic capabilities primarily due to the common aspects of strategic management that they shared. Both of these theories focused primarily on adaptability via knowledge sharing interactions. We utilized various research databases to identify articles and research papers related to the application of these topics in firms and the government acquisition community.



Table 2. The Systematic Review Process. Adapted from Jesson and Lacey (2011).

Systematic Review Process		
Steps	Description	Example
Scoping	Narrows focus of research	What empirical evidence is available regarding dynamic capabilities and CLT?
Planning	State the purpose of research	Can dynamic capabilities and CLT be applied in the federal government?
Document	Results of searches	There are 418 documents in the EBSCO database that mention dynamic capabilities.
Inclusion/Exclusion Criteria	Explicitly stating the criteria considered for inclusion in research	U.S. firms applying dynamic capabilities.
Search and Screen	Application of inclusion/exclusion criteria	International firms will not be considered.
Quality Appraisal	Ensuring literature is of sufficient quality for inclusion	Research methodology was of poor quality.
Data Extraction	Relevant data from studies is compiled	Instances of the application of dynamic capabilities are compiled.
Analysis	Evaluation of data extracted	What can we infer in comparing these studies?

The second step in the systematic review was establishing a plan, with the objectives and purpose clearly stated (Jesson & Lacey, 2011). We determined that the purpose of the literature review was to identify areas where the acquisition community within the federal government may improve through lessons learned by applying the concepts of CLT and dynamic capabilities within industry.

The third step in the systematic review was documenting results of searches conducted (Jesson & Lacey, 2011). Documentation included the title of the database being searched, the date the search was conducted, the range of years included in the search, the keywords being searched, and the number of hits for each search. This was conducted throughout the search for literature relevant to the topics. The results were then compiled in a search report table.

The fourth step in conducting a systematic review is establishing inclusion and exclusion criteria (Jesson & Lacey, 2011). Literature considered for inclusion discusses CLT and dynamic capabilities within private sector industries, as well as the acquisition



community of the U.S. government. Literature regarding management practices that did not address CLT and dynamic capabilities was excluded from the systematic review. Due to the time constraints of the project, we were not able to accomplish this step with the standard thoroughness of normal systematic reviews. In order to complete this step within our allowable time frame, we restricted our research to ten weeks.

The fifth step was screening the results of searches conducted and applying the inclusion and exclusion criteria to each document (Jesson & Lacey, 2011). This allowed for relevant literature to be incorporated into the research while disregarding literature that is deemed to be irrelevant to the study. In order to streamline the review process, we conducted steps three and five jointly.

The sixth step was appraising the quality of the research collected (Jesson & Lacey, 2011). Studies that were screened and deemed acceptable regarding content were then evaluated on the “hierarchy of research study design” to address credibility (p. 116). Applicable items from the Consolidated Criteria for Reporting Qualitative Studies (COREQ) were applied to further help identify the credibility of resources. COREQ is a checklist used by scholars to provide a guideline which measures the quality of the studies used in a literature review (Tong, Sainsbury, & Craig, 2007). Typically, COREQ is used in medical field but its ideas are transferable within across many different industries (Jesson & Lacey, 2011). We determined our credibility threshold to be published theoretical literature, empirical studies and official government reports.

The seventh step was the data extraction process (Jesson & Lacey, 2011). At this point, the literature included in our systematic review was identified, and relevant data from these documents was extracted. This step was also completed concurrently with steps three and five in order to maximize time efficiency.

The eighth and final step was the analysis of the data compiled during extraction (Jesson & Lacey, 2011). Chapter IV of this report addresses the findings regarding the application of CLT and dynamic management capabilities in firms and whether these concepts provided value to the firms in question. With the proper methodology in place, we developed two questions to answer that allowed us to focus on the goal of the analysis.



- If the use of CLT and dynamic management capabilities proved to be a value-added practice, how might the federal government apply these tools?
- Is it feasible for the federal government to apply these practices, or do the bureaucracy and legal restrictions preclude their application in a meaningful way?

The following chapter discusses these questions and the findings of the research.



IV. ANALYSIS

A. EMPIRICAL STUDIES

To identify areas of dynamic capabilities and Complexity Leadership theory that could be utilized within the DoD, we reviewed empirical studies within pharmaceutical industries, biotech industries, and software companies to infer key points. We chose these three industries because they shared characteristics with the defense industry such as a high level of competition, constant need for adaptability, and the importance of knowledge sharing. We reviewed three empirical studies that captured both models, although interpretation was needed for CLT due to the lack of studies in this field.

As a firm increases in size and complexity, managers become increasingly responsible for gaining competitive advantage through innovation, rather than just improved efficiencies. Within the CLT framework, leaders promote tension between different clusters and individuals in order to foster and expand innovative thinking within a firm. These relationships within a firm fall into a category of influence known as social capital. Social capital within the context of an organization is defined as the network of relationships among people who work within the firm. Organizational social capital (OSC) has great influence in the operation of a firm, especially in regards to its innovativeness (Nahapiet & Ghoshal, 1998).

1. Software

In a recent study of the role of leadership in operational and entrepreneurial systems within Vietnamese software firms, Luu (2016) found that managers should develop and utilize OSC as a means to link the ambidextrous nature of a firm to the firm's entrepreneurial systems. Entrepreneurial systems within the context of this study is identified as the entrepreneurial orientation (EO) of the firm. This study, in which the sampling consisted of 427 persons serving in managerial positions within their respective firms, used a series of questions in a survey format to measure the importance of ambidextrous leadership, entrepreneurial orientation, and OSC as a mediator between the two (Luu, 2016).

Ambidextrous leadership utilizes two leadership behaviors known as opening and closing (Rosing et al., 2011). Rosing et al. (2011) described *opening* behaviors as actions that



encourage innovativeness and new ideas among employees, while *closing* behaviors are described as actions that encourage the implementation of these ideas. Within the framework of the discussed study, managers utilize OSC in order to translate these leadership behaviors into action within a firm's entrepreneurial systems. The utilization of OSC is exhibited through fostering "high levels of trust and goal congruence among employees" (Luu, 2016, p. 231). High levels of trust strengthen relationships between individuals within the organization, while goal congruence gives clarity toward a common effort. In CLT, the strength of relationships is positively correlated with the ability for managers to encourage tension among employees.

This study in particular had various hypotheses which were particularly notable. One is that OSC positively moderates ambidextrous leadership and EO. The importance of relationships between individuals within an organization's network was found to be of high value when encouraging entrepreneurial behaviors within the firm. The key for managers is to balance human capital factors, such as knowledge and skill, with improving relationships within the firm. OSC drives the ability for managers to encourage employees to grow their organizations internally. Relating this back to the previously discussed theory, the role of managers within the CLT is to act as mediators between the organizational and entrepreneurial systems (Arena & Uhl-Bien, 2016).

Another hypothesis was the idea that "organizational trust and goal congruence positively moderates ambidextrous leadership and EO" (Luu, 2016, p. 232). Luu (2016) found that high levels of trust within an organization is found to promote higher levels of EO, thus improving entrepreneurial systems within the firm. Trust plays an important role in encouraging exploratory strategies, and the exploitation of those same innovative ideas to help firms gain and maintain competitive advantage within their respective industries. When related back to leadership, the ambidextrous nature of managers within organizations with high levels of trust is further reinforced due to the buy-in of employees within the firm (Luu, 2016). Employee support of the firm's direction and decision-making is especially important in the cultivation of relationships. Group cohesion and brokerage, which are foundations of CLT, among the various relationships are highly influenced by the level of trust among employees and coworkers. When levels of trust are high, individuals and groups are able to balance the necessary tension which is valued in the CLT framework (Arena & Uhl-Bien,



2016). This tension is valuable in increasing the firm's ability to innovate. As leaders within firms are increasingly more ambidextrous, those same leaders must balance their ability to increase productivity and increase innovation (Rosing, Frese, & Bausch, 2011). Innovation is directly related to the entrepreneurial orientation of the firm. Thus, the connection between ambidextrous leadership and EO is found, and leaders then become responsible for the cultivation of innovation through intra-organizational relationships.

Furthermore, goal congruence is inherently intertwined with trust, and acts as a measure of OSC (Luu, 2016). Goal congruence is defined by how well the organization's mission is reflected by each member within the organization (Nahapiet & Ghoshal, 1998). Goal congruence is an important aspect of OSC because it is the measure of how well leadership within a firm is able to translate their overall goals for the firm to the lowest level member. Organizations with high levels of goal congruence among employees also have an enhanced capability to enact entrepreneurial behavior at an individual level (Luu, 2016). By encouraging individual entrepreneurial behavior, leaders within a firm have a grasp on their own EO and are able to use this ability to increase innovation throughout the organization.

2. Pharmaceutical

The aim of the Narayanan, Colwell and Douglas (2009) study was to understand what managers do to foster the development of dynamic capabilities. Using interviews conducted with 34 managers, a comparative analysis of a single pharmaceutical company's attempt to develop capabilities in two fields of study within the company—fast cycle drug development and chemical biology R&D platform—was conducted to understand the origins of dynamic capability development. The development of these capabilities was led by senior management, highlighting the role of human agency during the capability-building process as well as the influence of the internal and external environment on the decision to pursue the development of a capability or the determination to discontinue development.

Narayanan et al. (2009) were able to infer three key themes: “cognitive orientations and organizational routines as interlinked components of capabilities, the role of senior management in capability development, and the fragility of the development process” (p. S34). All three are interlinked together to work in unison to ensure the optimization of the company.



Cognitive orientation is the act of changing the mindsets of the employees, while organizational routines is the act of changing practices in support of cognitive orientation (Narayanan et al., 2009). Before a manager is capable of changing practices, they must ensure that their team understands the overarching goal, followed by implementing steps that will most effectively assist the team toward reaching it. In the framework of dynamic capabilities, this means managing assets and resources, either by exploitation or exploration, in a capacity that can be replicated throughout the organization (Denford, 2013).

In order to implement these changes, the role of the manager is key. First, they need to change their own mindset and practices before they are capable of influencing others. As one high level executive explained: “I view my task as building organizational capabilities” (Narayanan et al., 2009, p. S37). This study discovered the need for senior managers to negotiate the resistance between different entities within the organization. As previously discussed, central to the CLT framework is the idea of managers acting as brokers who manage the tension between individuals and networks within their firm (Arena & Uhl-Bien, 2016). Managers, most notably at a senior level, were found to be responsible for bridging their respective firm’s intra-organizational network. The ability to facilitate employee cooperation may be subtle or routine yet is key in implementing change.

The fragility of dynamic capabilities is noted through the failure of these two functions within the organization to continue due to mergers and hostile takeovers. In the case study, Narayanan et al. (2009) described the merger and takeover of the pharmaceutical company, and how the mergers created an unstable environment for the continued development and practice of the new capabilities previously studied. This shows that even though an organization may be able to capitalize on dynamic capabilities, they must ensure that everything is continued in order to maintain the practice of new capabilities as routines (Narayanan, Colwell, & Douglas, 2009).

3. Biotechnology

In a study of rising biotechnology firms’ successes based on their dynamic capabilities, Deeds et al. (1995) identified that managers should focus on geography of their company, incorporating the smartest scientist feasible, and acquiring management with the appropriate credentials and experience (Deeds et al., 1995). The study, which consisted of 94



biotechnology firms, correlated IPO prospectus data with different measures to include new productions, location, and quality of scientific team by means of citation analysis (Deeds et al., 1995). It is important to delve into the causality for each of these factors to identify the key components of CLT and dynamic capabilities that are being exploited.

Their first hypothesis confirmed was that the geographic location of firm's headquarters to an area with a higher concentration of biotechnology firms increases in productivity at a higher rate than those in lower concentrations (Deeds et al., 1995). This is due to the ability of firms to source knowledge from spillovers of similar firms, universities and non-profit research institutions, and labor pools. A key concept of dynamic capabilities is the ability to acquire available knowledge from the environment (Denford, 2013). By multiple firms being within close proximity, the ease of obtaining the knowledge increases.

Their second hypothesis illustrated the importance of having reputable scientific teams in means of citation quantity toward generating larger productions (Deeds et al., 1995). By acquiring members whose products are cited at larger frequencies as quality research, the quality of products produced increases (Deeds et al., 1995). By acquiring scientific experts who are well cited in their field of research, a firm is capable of internalizing that knowledge. This is key to the entrepreneurial systems within firms.

Their third hypothesis identified that management with previous R&D experience was vital toward a firm's productivity (Deeds et al., 1995). By utilizing R&D experienced managers, firms are able to bridge the gap between the operational system and the entrepreneurial system, also known as the adaptive space (Arena & Uhl-Bien, 2016). The managers utilized their prior experience to create a knowledge-sharing environment, connecting the R&D systems of the company with the other formal systems within the firm (Deeds et al., 1995). The formal systems were then able to utilize ideas from the R&D sector to improve efficiencies on normal day to day operations. This helps by capitalizing on the exploitation and exploration of both systems concurrently (Denford, 2013).

4. Summary of Studies

These studies provided key insights on the importance of social capital in the ability for managers to promote innovation among individuals within their organization. Within the



framework of dynamic capabilities, the EO of the organization is directly related to the human resource systems in place (Augier & Teece, 2009). The HR aspect of dynamic capabilities is defined by the intra-organizational relationships between individuals within the firm, which are managed by leadership (Augier & Teece, 2009). These relationships between individuals and clusters within the firm are especially important between the organizational and entrepreneurial systems in place, and the tension between the two systems is the foundation for CLT (Arena & Uhl-Bien, 2016). The essence of social capital, within the context of managerial CLT, can be identified as the leadership's ability to manage the environment in which this tension can thrive (Arena & Uhl-Bien, 2016). By identifying how innovation can be cultivated and maintained by leadership and including various aspects of social capital such as trust and goal congruence, managers can identify strengths and weaknesses within their own organizations. Additionally, the research highlighted the importance of internalizing and outsourcing of knowledge through geographic location, knowledge sharing, and R&D experience within management rolls (Deeds et al., 1995). Table 3 illustrates key aspects we identified from each study.



Table 3. Dynamic Capabilities and CLT Identified in Studies

Study	Dynamic Capabilities	CLT
Software	Balance human capital of knowledge and/or skills. Integration of various parts within the organization.	Act as mediators between organizational and entrepreneurial systems. Support employees in direction and decision making. Manage cultivation of innovation with intra-organizational relationships.
Pharmaceutical	Ensure team understands the goal and implement steps toward reaching them.	Negotiate the resistance between different entities as bridge connectors.
Biotechnology	Insource knowledge within near geographic area. Collect and capitalize on internal knowledge obtained via personnel cited more frequently.	Bridge the gap between operational systems and entrepreneurial systems via R&D experience.

B. PROBLEMS IDENTIFIED IN THE DoD ACQUISITION PROCESS

In the past, the United States had enjoyed an inherent advantage over the competitors within the international warfighting environment. However, the proliferation of asymmetric warfare coupled with instability and lack of consistency within the acquisition process has led to an unpredictable security environment (Defense Acquisition Performance Assessment Project, 2006). While the U.S. economic and security environment continues to adapt to the rapidly changing international domain, the acquisition workforce has largely remained stagnant in its processes. Various attempts to revamp the acquisition process has moved the DoD acquisition workforce in the right direction, but the lack of agility in implementing these steps has led to a dwindling competitive advantage over international competitors (Defense Acquisition Performance Assessment Project, 2006). In regards to leadership and managerial competencies, frameworks and models were developed to address various shortfalls of the DoD (U.S. Office of Personnel Management, 2008; U.S. Office of Personnel Management, 2010). While the development and use of general competencies are necessary, the complex and dynamic nature of the international environment will require more than these competencies in order for DoD leaders to adapt and overcome future and current challenges (Trainor, 2017).



The deputy secretary of defense initiated a *Defense Acquisition Performance Assessment Report* (2006) to review the complex acquisition process and identify key areas for improvement. The report first identified the complex nature of the acquisition process. While the complexity of the process was not necessarily the main problem, the lack of alignment with organizational values within the acquisition community prevented the process from succeeding (Defense Acquisition Performance Assessment Project, 2006). Specifically, the current model of the acquisition process highlights the disconnects between all facets of the process and the individuals involved. As problems continue to grow in size and scale, an acquisition process will rely not only on knowledge and technological resources, but also the ability for all individuals and groups within the acquisition process to work together with the same goals in mind. While the DoD continues to exploit its current resources, leaders are continuously faced with the task of balancing their own efficiencies with the need for innovation. This is where the DoD has the opportunity to exploit those relationships and use social capital to improve its acquisition process.

In the previous section of this chapter, we discussed the importance OSC in improving the entrepreneurial orientation of a firm, with trust and goal congruence as avenues for employee growth and positive working environments (Luu, 2016). The acquisition community has expressed lack of alignment with DoD organizational values and inability for employees work with one another (Defense Acquisition Performance Assessment Project, 2006). The nature of the acquisition process is expected to lead employees within each subset of the process to focus on different aspects of any given project. However, the onus is on leaders of each part of the acquisition process to develop the relationships needed to align individual goals with organizational goals. Leaders should facilitate the tension between each part of the acquisition process, as they should be responsible for encouraging new ideas and innovation (Arena & Uhl-Bien, 2016). The idea of goal congruence is further discussed by Chief of Naval Operations (CNO) Admiral Richardson (2016) in his framework developed for the Navy Civilian Workforce (NCW). The CNO explained that the framework was not to act as a strategic outline for leaders but to give ownership to leaders, whose values are aligned with the overall organizational goals of the NCW.



Currently, the DoD workforce leadership is expected to follow a set of core competencies measured by various proficiency levels ranging from low to high, or 1 through 5 (U.S. Office of Personnel Management, 2008). In doing so, the DoD implied that each project within the acquisition workforce requires the same level of each competency in order to succeed. While many of the competencies discussed by OPM will require a common proficiency level among leaders, the idea that each project will require the same level of proficiency contributes to the lack of consistent results in regards to project accomplishment and results. If leaders are expected to follow a leadership competency template, it should be expected that the unpredictable nature of defense industry requirements will produce the same, historically inconsistent results. Jared Serbu (2016) discussed the recently developed Navy Civilian Workforce framework for the civilian workforce, adding that Admiral Richardson was explicit in his use of the word *framework*, explaining that the term strategy implies a “one size fits all” mentality that was not appropriate for his vision of the NCW. This further implies that the goal of the leaders within the acquisition workforce is not to follow a step-by-step process for project accomplishment, but rather to use their knowledge and experience to promote innovation where appropriate, while also driving efficiency and accomplishment of deadlines.

As the DoD seeks to improve its acquisition processes, managers have an opportunity to hone their management skills and exercise ambidextrous leadership. We previously discussed the importance of ambidextrous leadership as the ability to induce opening and closing behaviors among members within an organization (Rosing et al., 2011). Specifically, the role of managers within the DoD acquisition process could evolve from a traditional view of managers to a more ambidextrous purpose, which would be in line with maintaining competitive advantage over the international defense industry. The framework developed by CNO Richardson (2016) is written with the idea that leaders are responsible for identifying the resources that they manage and fostering local innovative thinking that is exploitable. In order for managers to succeed in accomplishing this goal, they must also manage the tension between the various entities within the NCW and find ways to mediate and harness these interactions within the acquisition process. Using various aspects of CLT and dynamic capabilities, as well as the findings from the previously discussed empirical studies, we believe that all DoD entities can benefit from ensuring DoD organizational goals are properly disseminated throughout all employees, improving interactions among employees and encouraging the development of innovative ideas.



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V. CONCLUSION

A. LIMITATIONS

In our attempt to conduct a thorough systematic review of both dynamic capabilities and CLT literature reviews, we encountered a multitude of barriers. The success of our research relied on two frameworks that are in different stages of scholarly maturity. On one hand, dynamic capabilities have a plethora of empirical studies which delve deep into various lone aspects within the framework. On the other hand, we discovered very little empirical data on the study of CLT because it is a relatively new framework. As CLT continues to grow in the strategic management field of study, more empirical studies will be conducted and a proper systematic review of CLT literature can be conducted.

In addition to the lack of CLT empirical studies, we found that empirical studies on DoD entities were severely lacking. While many of the reports that we researched were incredibly useful as qualitative analyses on the status of the DoD acquisition workforce, empirical studies would be invaluable in improving the DoD's ability to accomplish the mission. Various studies indicated the importance of innovation and the stagnant practices of DoD entities, but without empirical data the DoD will have a difficult time making changes in specific areas.

B. RECOMMENDATIONS

In this study we've discussed the theoretical backbone of CLT and dynamic capabilities, and the utilization of these ideas as catalysts in the advancement of the DoD civilian acquisition workforce. First, we discussed the importance of leadership in regards to managing relationships within a firm. We established that leaders are responsible for cultivating an environment in which their employees are encouraged to interact, exploiting that interaction in order to find innovative ideas locally (Arena & Uhl-Bien, 2016). Locally developed ideas are important in order to maximize employee buy-in to changes within the firm. Second, we discussed the importance of both internal and external factors in regards to business environment, and the ability of firms to adapt to the industrial evolution of that environment (Denford, 2013). Leaders within a firm are expected to recognize overarching strategic changes among various competitors, as well as assess internal processes within their



organization to improve efficiencies and encourage innovation (Denford, 2013). Leaders utilize the ideas of exploration and exploitation; using the resources available to find innovative ideas and advance the firm's competitive advantage. After researching the theories separately, we began to compare the theories with each other, primarily focusing on links between the theories within the context of leadership and managerial roles. We found the link between the two in the idea of HR systems within a firm; managers within the dynamic capability framework were responsible not only for the capabilities of the firm but the organizational infrastructure of the firm's network (Augier & Teece, 2006). This is directly related to role of managers within the view of the CLT framework.

We then explored various empirical studies which sought to implement these theories into practice. One such case study was an analysis of various Vietnamese software companies and the importance of OSC in improving efficiencies and encouraging innovation (Luu, 2016). Another case study looked at two projects conducted by a pharmaceutical company and compared the development of new dynamic capabilities from beginning to end (Narayanan, Colwell, & Douglas, 2009). The idea of cognitive orientation was discussed and was found to be a key component of senior management's ability to implement ideas throughout the firm. The case study also discussed the importance of utilizing internal processes to develop new capabilities in response to external factors. The third case study examined multiple biotechnology firms, and various factors that have an impact on these firms' ability to develop new capabilities through the resource-based view of the firm (Deeds et al., 1995). The case study looked at the importance of multiple resources within the firm such as optimal geographic location, highly skilled employees and experienced managers.

After examining the utilization of dynamic capabilities and CLT by private sector firms, we then researched various DoD publications on current DoD civilian leadership policies and associated problems in regards to maintaining competitive advantage over other countries in the defense industry. Through the *Defense Acquisition Performance Assessment Report* (Defense Acquisition Performance Assessment Project, 2006), we determined that the DoD acquisition workforce relies on stagnant ideas and a predetermined template of approach in order to solve problems and finish projects. However, recent literature on the matter of leadership within the DoD signals a shift in frameworks; leaders of projects are to receive increasing amounts of ownership of their projects, while top level leadership DoD-wide will



look to develop frameworks for DoD civilian leaders that will promote a common cognitive orientation throughout the DoD acquisition workforce. This shift in mindset indicates that positive change is not only welcome but will be important as competitors continue to advance their capabilities. While there are constant calls to increase the training of future DoD civilian leaders, there has been little done to improve the quality of training and the ability for the DoD to circulate its cognitive orientation throughout the entire department. As previously discussed, the lack of organizational goal alignment is a key factor in the consistency of acquisition products.

Admiral Richardson's (2016) recently released Navy Civilian Workforce framework is an appropriate model for other departments within the DoD to follow in regards to leadership issues plaguing the DoD civilian acquisition community. The CNO's approach to civilian leadership development was to create a framework that relies on organizational goal congruence among civilian leaders while allowing for those same leaders to retain ownership of the projects they are responsible for. This implies that less formal structure will reduce the burden placed on civilian leaders and provide greater autonomy to civilian leaders to manage the project and the employees that work under them. By using this authority to positively influence a culture of innovation, civilian leaders can further increase the DoD's ability to innovate with speed and efficiency. As civilian leaders place more emphasis on improving organizational social capital, the leaders will find that employees will be more willing and able to increase innovation and improve the efficiency of formal systems (Arena & Uhl-Bien, 2016; Nahapiet & Ghoshal, 1998).

Admiral Richardson's framework shares several themes with the 2017 NDAA. One of the underlying purposes of the restructuring called for was that "the new organization should achieve its objective by breaking down barriers to execution and reducing layers of oversight and unnecessary process imposed upon the Services which are executing acquisition programs" (DoD, 2017, p. 7). These goals are consistent with the CLT concept of cultivating knowledge among social groups by reducing barriers and striving toward a flatter organization. A "culture of innovation" will be necessary in upper echelons of the DoD and should be championed by leadership to ensure that the culture permeates throughout the organization (DoD, 2017, p. 3). These examples demonstrate a cognitive orientation shift from a highly traditional culture to a culture with greater focus on social capital and knowledge sharing.



Upon further examination of private sector successes, we determined that the application of dynamic capabilities and CLT could be applied to DoD frameworks such as the CNO's framework. Civilian leaders are responsible overall for the project they work on; however, a resource-based view is not adequate to accomplish project completion in all cases. Civilian leaders should also take into account the HR systems within their projects and ensure that they are fully exploiting innovative ideas by focusing on locally developed innovation. The civilian acquisition workforce can also benefit from ensuring that goals of the DoD are transparent and the cognitive orientation of top level management is transferred throughout the organization. Through our research we found that managers, who have primarily been focused on human capital and resources, should evaluate not only the knowledge and skills available to them but how those capabilities interact with one another. Managers should seek ways to integrate the various systems and entities within their purview in order to ensure that the environment they are responsible for is conducive to improving the development and efficiency of their projects.

A 2012 report to congressional committees by the Government Accountability Office (GAO) identified failures of the DoD to pinpoint current and future capability gaps (Government Accountability Office, 2012) Although required to do so, only eight of the 22 occupations deemed to be mission-critical reported conducting a competency gap assessment. None of the eight mission-critical occupations which conducted the analysis reported the finding to allow resources to be allocated to areas of high priority. Additionally, the report addresses the failure of the DoD to provide an assessment of the mix of military, civilian and contractor personnel and the capabilities they possess. Of the 11 functional workforce areas identified, two provided the mix of employees, while the other nine provided partial or no data. Most data related to contractors was incomplete. The reason cited by the DoD for incomplete data was the fact that contracts are written for services and typically do not prescribe the number of personnel required.

Because the DoD does not have a firm grasp of the resources it has available, the development of dynamic capabilities through the alignment of resources will be difficult. As discussed previously, dynamic capabilities are developed over time, as traditional managerial tasks are accomplished through the development of effective routines. These new, more effective routines, should be disseminated to other applicable organizations within the DoD. In



the case of the pharmaceutical company an executive sponsor of the routine facilitated this dissemination. Correspondingly, if the DoD adopts the idea of developing dynamic capabilities, a sponsor at the SES level would be necessary. The final report submitted to the congressional defense committees by the Secretary of Defense provides an avenue for this to take place with the appropriate level of support. The second phase of restructuring implementation calls for the establishment of an Obeya room, which is Japanese for “large room” (DoD, 2017, pp. 20–21). A forum of team leaders, the CMO and the Deputy Secretary of Defense will meet to facilitate communication among entities during the transformation of organizational structure. This concept could be permanently adopted to enable the flow of knowledge between the different organizations and would enable the flow of knowledge between different organizations within the DoD.

As the field of strategic management continues to evolve, our research currently shows that the DoD is behind in regards to finding innovative ideas. While the DoD has historically been responsible for many breakthroughs, it has also been subject to many failures. Failures are a waste of taxpayer dollars, and significantly reduce the competitive advantage the U.S. defense industry has maintained over the course of the past several decades. The field of strategic management has much to offer to DoD civilian leadership by solving problems within the DoD using resources currently available. This means that the DoD has the opportunity to improve efficiencies and promote innovation, while also saving a great deal of capital through locally developed ideas and the reduction of waste. While the DoD civilian acquisition workforce continues to grow in size and complexity, it is imperative that leaders are properly equipped with the tools to handle external factors and improve internal processes throughout the entire organization.



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