I. Introduction

There has been a great deal of recent interest by academics in the study of dynamic capabilities. A dynamic capability has been defined to be a capacity to purposefully modify the resource base of an organization (Helfat, Finkelstein, Mitchell, Peteraf, Singh, Teece, and Winter 2007). To more thoroughly understand dynamic capabilities, Teece (2007) has created a framework to identify different variables and understand their interrelationships pertaining to the creation of dynamic capabilities. The stated aspiration of the dynamic capabilities framework is “to explain the sources of enterprise-level competitive advantage over time, and provide guidance to managers for avoiding the zero profit condition that results when homogeneous firms compete in perfectly competitive markets.” (Teece 2007, p1320). In order for firms to create a sustainable advantage they need to create hard to replicate dynamic capabilities. The dynamic capabilities approach advances the concept that the competitive advantage of a firm lies in its managerial and organizational processes that lead to the development and deployment of dynamic capabilities (Helfat et. al. 2007). Therefore, managers need to have an understanding of the specific aspects of their processes critical for the development of dynamic capabilities in their firm. When managers have an understanding of the underlying processes and how they lead to dynamic capabilities they have the potential to enhance their firm’s ability for innovation.
The specific research question examined in this paper is how organizational processes such as knowledge integration and managerial processes such as the relationship between the CEO and CIO specifically lead to dynamic capabilities. After reviewing the literature, we examine in detail the impact of these specific managerial and organizational processes on dynamic capabilities and then present a case study that illustrates both processes.

The relationship between processes and dynamic capabilities is a theoretically challenging area for researchers. In addition to developing the dynamic capabilities framework, researchers need to begin to empirically validate the framework. The development of an explicit case to illustrate the relationships between processes and dynamic capabilities provides greater insight for both academics and practitioners. This paper illuminates the connection between processes and dynamic capabilities in the dynamic capabilities framework and provides a specific business case to illustrate.

II. Dynamic Capabilities: Sensing, Seizing and Reconfiguring

The development of the dynamic capabilities framework can be traced to the seminal work of Teece, Pisano and Shuen (1997). Teece (2007) has refined the dynamic capabilities framework with the main components being sensing opportunities and threats, seizing opportunities and managing threats and reconfiguration. It is on this refined framework that we base our discussion of dynamic capabilities. Researchers have proposed that managerial and organizational processes lead to the development and deployment of dynamic capabilities (Helfat et. al. 2007). To examine this in more depth, we focus on the relationship between the CEO and CIO as a managerial process and
knowledge integration as an organizational process and how these processes lead to the development of a firm’s dynamic capabilities.

Both managerial and organizational processes lead to the development and deployment of a firm’s dynamic capabilities. Particular elements of dynamic capabilities include the ability to sense, seize and reconfigure opportunities and threats. Managerial processes, such as the ongoing relationship between the CEO and CIO, are important. As the relationship strengthens, the ability of the managers to sense and seize opportunities and to reconfigure strengthens. Knowledge management, encompassing the creation of learning, knowledge sharing and knowledge integrating procedures, is critical to the development of dynamic capabilities. The organizational process of knowledge management is particularly useful for sensing and seizing opportunities as well as for reconfiguring the firm’s assets.

The Dynamic Capabilities Framework is a perspective that has been receiving increased interest and has evolved rapidly since the seminal work of Teece et al. (1997). In Teece et al. (1997), the authors developed the dynamic capabilities approach to analyze the sources of wealth creation and capture by firms. Several recent works have delineated the evolution of research on dynamic capabilities (Helfat and Peteraf 2009; Teece 2009). According to the Dynamic Capabilities Framework, firms need to align their resources with market needs through sensing, seizing and reconfiguring activities (Teece 2007).

The first set of activities that firms need to focus on are sensing activities, in order to find new opportunities. To accomplish this, individuals must scan, learn and interpret from both existing information and new data. This leads to discovering existing
opportunities and creating new opportunities. Enterprises should incorporate these activities in a systematic way rather than leaving these activities to chance. Now more than ever, management needs to find ways to gain insight from large quantities of information. They must filter information and identify relevant information on which to focus their attention (Ocasio 1997).

After sensing a new opportunity, the next step is to seize the opportunity. Seizing opportunities requires determining your business model, understanding resource needs, making decisions pertaining to investing in technology and other resources and then leading others to make the appropriate changes. Due to the fact that multiple functional areas are involved, more coordination and management are necessary. Cross-functional activities and associated investments must take place concurrently, rather than sequentially, if enterprises are to cut time-to-market for new products and processes (Teece 2007).

Following the seizing of an opportunity, ongoing reconfiguration of resources is necessary. This involves realignment of resources so that their combinations increase value to the firm. Reconfiguration gives the manager the ability to adapt to changing circumstances and to break out of routines. Innovative firms adapt to changes and adopt new technologies earlier than most firms that adopt innovations once they are widely accepted (Massini, Lewin and Greve 2005). Reconfiguration can be accomplished through changing organizational structures, managing strategic fit and achieving incentive alignment. Innovation can be enhanced through a loosely coupled organizational structure that can lead to more entrepreneurial action. Strategic fit involves the realignment of assets to increase the value of the firm. Incentives need to be
carefully designed in order to ensure that managers and shareholders support the performance improvement efforts of the firm,

III. Processes and the Development of Dynamic Capabilities

To really understand dynamic capabilities one must have a thorough understanding of the underlying processes used by a firm. There are many different types of processes, but what we are concerned about are processes that impact the resource position of an organization, because they can impact dynamic capabilities (Helfat et.al. 2007). Dynamic capabilities have been equated with processes (Eisenhardt and Martin 2000) and processes have also been considered as mechanisms to put dynamic capabilities into use (Helfat et.al. 2007). In this paper, an effort is made to illustrate how firms that understand their processes have a better ability to develop and deploy dynamic capabilities. The following discussion in this section builds heavily on the dynamic capability framework (sensing, seizing and reconfiguring) explicated by Teece (2007).

Organizational Processes

Van de Ven (1992) distinguished between three different meanings of the term process used in the strategic management literature. Organizational processes are specific systematic series of actions directed by specific organizational members toward goals. There are many different organizational processes including change management processes, investment processes and organizational learning processes. We focus on knowledge management processes since “creation of learning, knowledge-sharing, and knowledge integrating procedures are likely to be critical to business performance, and a
Knowledge management enables sensing market technological opportunities in a number of ways. Organizational learning allows for a better understanding of what knowledge is available, which helps determine which new technologies to select and impacts internal research and development. Also, learning enables you to become aware of new developments in technology. Knowledge transfer is very useful to figure out who primary suppliers are and which ones would fit best, which market segments to target and to identify changing customer needs.

Knowledge management also enables the seizing of opportunities. Through examining organizational knowledge, you learn from what you have done in the past, which helps you define your business model and how you are going to capture value. Organizational learning is needed to recognize non-economic factors, values and cultures. Knowledge transfer helps to select technology and target customers. Knowledge integration is very important to recognize and avoid opportunities that would lead to cannibalization.

Knowledge management is important in decentralized structures that allow for realignment. In a decentralized structure, knowledge boundaries can be moved much more easily to realign assets. Knowledge transfer and integration are both needed to know which asset combinations are value enhancing. Knowledge integration allows individuals within the organization to recognize cospecialized assets and reconfigure those assets. During reconfiguration, the need for additional learning, transfer or knowledge integration will become apparent.
Managerial Processes

Managerial processes are a systematic series of actions directed by managers to meet a particular goal. There are several ways that managerial processes lead to dynamic capabilities through sensing, seizing and reconfiguration. The capacity to sense opportunities is often enabled by search processes that are led by managers. Search processes are highly connected to the ability to modify a firm’s resource base (Helfat et al. 2007). Managers also examine options to coordinate internal research and development. The CIO has specific understanding of possible technology and the CEO scans the environment to see what the opportunities are in the marketplace. The managers then identify potential suppliers and customers.

Managers play a key role in seizing opportunities. They make decisions about selecting technology, targeting customers, and determining suppliers. Managers need to allocate assets and resources in ways that they will best utilize and recognize when assets are complementary. The CEO has the ability to allocate resources and the CIO has the ability to recognize when technology assets are complementary. In order to effectively seize opportunities, the CEO and CIO must communicate with each other. These leaders must also build loyalty and commitment with others in the firm through effective communication.

In order for reconfiguration to be successful, management must use integration and coordination skills, particularly when there is a decentralized structure. Executives need to manage the strategic fit of resources or assets to enhance value. The way they
achieve this is to align incentives to ensure that they are capturing profit and protecting
rents. Executives must also transfer and integrate knowledge. The relationship between
the CEO and CIO is particularly important to transfer knowledge and integrate
Information Technology. An important issue that arises in reconfiguration is that of
intellectual property protection. The CEO is able to identify potential vulnerabilities and
the CIO is able to identify ways to ensure the protection of intellectual property.

IV. Case Study

Using IT to Enhance Dynamic Capabilities and Organizational and Managerial
Processes in a Manufacturing Firm

In this example, we discuss a large global manufacturing company that achieved
ambitious business goals over a 5 year period largely due to expanding their resource
base through investment in information technology for the purpose of knowledge
management and commitment to innovation. The CEO achieved his strategic goals
which required information integration across geography and business units. The CEO
worked with the CIO to acquire an enterprise information system (EIS). Organizational
processes were changed to utilize this EIS, resulting in the desired growth in profitability
and market share. He identified the integration of business and IT as a key organizational
process.

The company was ranked 9th in their industry and the executives sought to move
into the top three through product innovation, aggressive sales and revenue growth,
logistics capabilities, and expansion into global markets. A series of previous mergers
had resulted in multiple disparate manufacturing information systems located in many
different countries that could not effectively exchange information. The company’s
product line had reached a mature stage and the executives knew that minor technical
changes would not keep the company competitive with new, agile entrants. The CEO knew that he had to create an environment to share knowledge across business units, create efficiencies and support innovation.

The CEO had many years of international experience and communicated the vision of building an organization that was integrated across geographical locations as well as across business units with the primary goal being to serve the customer. The CEO viewed the role of information systems and information technology in the organization as crucial to increase efficiency in transaction processing and to provide information to analyze processes using key performance indicators, these both being important sensing activities. His strategy for growth in their market included adding new products, increasing the efficiency of their global supply chain, increasing production quality, offering competitive pricing, and becoming more responsive to customers, these activities each being done to seize opportunities. To build capacity to execute this strategy, the CEO realized he needed to tackle the problem of misalignment between business and information technology. The integration of business and IT is an example of reconfiguration.

In order to achieve the CEO’s stated goals, it was necessary to hire a new CIO who was first and foremost, a business leader. This search took a full year. Once hired, the CIO became part of the executive leadership team and IT was viewed as an important player in creating and executing business strategy. By focusing first on major organizational process improvements, the CIO reorganized their global information systems. The communication channels were consolidated and standardized between these systems to gain a production cost advantage over their competitors. Revenues from
these cost savings allowed the organization to focus on the next generation of product innovation in their industry. Thus, the efficiencies gained from IT generated the revenue needed to invest in innovation and next generation technology. The company became and continues to be a leader in investment in R&D. Next, the executive team made the decision to acquire and implement an enterprise information system. Unlike technology acquisition decisions of the past, this project did not have a clear cost justification. This investment decision is an example of seizing an opportunity for the organization.

An integrated information system demanded a reconfiguration and resulted in enhanced performance. The key performance indicators were made available and updated weekly in the corporate headquarters, in each region, and in every plant and created a competitive advantage. For example, responsiveness to customers with respect to pricing on customized products was reduced from 2 ½ weeks to 2 days.

At the time that the CEO made this decision, the company had the most competitive information technology in the industry and there was little motivation to make any dramatic changes. In fact, the CEO decision’s to create front-to-back integration for customers was not initially supported by his leadership team. One question they asked during the 3 year project was “which comes first, the change in the process or the new information system”? When a decision is made to replace or acquire an information system, if implemented properly, it changes organizational processes and positions the organization to be more adaptable. In the end, they allowed the new system to drive changes in process with a robust change management plan that included significant communication challenges.
This success story demonstrates the use of an organizational process, the value of alignment between business and IT, as an essential first step for improving the company bottom line as well as leveraging organizational knowledge to enhance product and process innovation and adaptation. The CIO became part of the executive team and was treated as a strategic business partner to drive innovation in new products and services. Thus, a major effort was undertaken to align their business goals with their IT strategies. The project included investing in an enterprise software system and developing appropriate business practices that fit the culture of the countries the plants were located in while permitting access to aggregate information for decision-making. Within three years, the company added ten new products and services, and moved up to become number three in their industry where they remain today.
References


