PROJECT MANAGEMENT AND THE TEMPORARY RELOCATION OF THE DECOUPLING POINT: HERMENEUTICAL PHENOMENOLOGICAL STUDY

by

Christopher Hicks

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

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Abstract

This study investigates, understands, and describes the value of engaging a project manager to support a customer-driven project that creates a random supply chain demand event. Specifically such an event would require the temporary re-positioning of the decoupling point between the supply push and demand pull within the supply chain. In response to the challenges of this type of event, this study will focus on two specific project manager roles. First, the project manager would act as an extension of a customer-driven project and serve as a conduit for the voice of the customer (VOC) into the supply chain. Secondly, the project manager would employ his skills and manage the temporary relocation of the decoupling point. The focused engagement of the project manager in these roles provides the firm with a process that is responsive to its customers and creates a competitive advantage as well as meeting the strategic needs of the customer. The methodology for this research study is a qualitative research approach, using a qualitative method, hermeneutic phenomenological design, and interviews as the research instrument. From a biblical perspective this study demonstrates the principals that support the profession of project management can find a foundation in the biblical principles.

Key Words: adaptive leadership, business process, business strategy, customer relationship management, CRM, Decoupling Point, ERP, MRP, operations management, organizational culture, project management, supply chain, supply chain management, voice of the customer

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_____ Date:_____

Dr. Gene Sullivan, Dissertation Chair

_____ Date:_____

Dr. David Duby, Dissertation Committee Members

_____ Date:_____

Dr. Gene Sullivan, DBA Program Director

_____ Date:_____

Dr. David Calland, Interim Dean- School of Business

Dedication

I was struck by love in a high school hallway. I dedicate this to my beautiful and caring wife of 30 years. Thank you for accompanying me on this impossible 30 year adventure. I Love You!

Acknowledgments

First, let me thank my God for his grace and love. I know that this document is his and not mine. Remember, we touch a life every day and never know the impact. So, tomorrow go change a life.

Second, I want my wife and children to know that I love you all, and I know that I would not be here without your support. To my brothers, you have each provided the bedrock. Thank you and I love you both. To my sisters and daughters, you are the sunshine of dawn and I am thankful.

Thirdly, I want to thank all of mentors, my editor, my Chair, the Dean, as well as Liberty University for providing the encouragement and guidance needed to accomplish something that forty years ago I thought was impossible.

Lastly, there is not enough room on this page to thankfully acknowledge the investment of time, energy, and effort that so many of you have made to bring this study to fruition. Please know that I am truly thankful for each of you and the blessing that you have been to me. I am appreciative of the love and grace that you have each given to me, and I know that many times I was so unworthy. God bless each of you.

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Section 1: Foundation of the Study

This study investigated the challenges caused by the competing requirements of the supply chain management model with the need to support a customer project exhibiting a customer-driven random event that inserts an added degree of uncertainty into the supply chain, and the value of introducing a project manager that will seek to develop temporary flexibility in the location of the decoupling point in support of the customer's project requirement (Andreev & Panayotova, 2013). Over the course of the study, the author will investigate the applicability of introducing a project manager and the project management skills in order to engage the support of non-standard customer requirements (Abramovici & Bancel-Charensol, 2004).

Background of the Problem

The challenge for supply chain professionals is to balance the cost to provide a product or service with the ability to deliver the product or service when the customer wants it (Kaminsky & Kaya, 2009). As a way to balance this cost, many firms have developed supply chains based on a push/pull model, sometimes known as a hybrid model (Kaminsky & Kaya, 2009). This model balances the push of raw materials or work in process (WIP) from upstream supply partners with the demand pull from downstream customers (Teo, Bhatnagar, & Graves, 2012).

Many supply chain professionals would argue that the pull side of the equation is the key to supply chain management (SCM) and that demand planning is important to a successful supply chain (Chen, Hsu, & Blue, 2007). This position suggests that efficiency becomes a reflection of demand penetration into the supply chain (Andreev & Panayotova, 2013; Kim, Fowler, Shunk, & Pfund, 2012; Ming-Hon & Hsin, 2007). Thus the most efficient supply chain is one that pulls raw materials based on demand pull (Ming-Hon & Hsin, 2007). The challenge for supply chain planners is to understand and isolate the point where the supply push and the

demand pull meet and connect (Kim et al., 2012; Ming-Hon & Hsin, 2007). This junction is known as the push-pull boundary (PB) or the decoupling point and represents the furthest point of upstream penetration of customer demand into the supply chain of an organization (Andreev & Panayotova, 2013; Kim et al., 2012; Ming-Hon & Hsin, 2007).

It was this decoupling point that was of interest to this study. In normal circumstances, defining the location of the decoupling point is complicated (Chang & Yeh, 2012). However, when customer-driven random events are introduced and an exception is required, temporarily re-locating the decoupling point causes challenges within the supply chain to grow exponentially (Sarangi & Srivatsan, 2009). The customer event or randomness is caused by unplanned orders, expedited delivery requests, or environmental challenges specific to the customer (Sarangi & Srivatsan, 2009). It is the randomness of these events that causes uncertainty to ripple out to the greater supply chain thus adding complexity to the temporary relocation of the decoupling point within the supply chain (Chang & Yeh, 2012). Due to the increased risk or uncertainty caused by these situations, firms typically discourage the practice of relocating the decoupling point and confine the customer to standard lead-time (Kim et al., 2012). From a strategic perspective, it would seem there should be a way or a process that would allow the temporary relocation of the decoupling point in order to accommodate these customer-driven random events as opposed to limiting the customer to standard lead-time.

There have been many studies of the push pull model decoupling point between supply push and demand pull. Several studies focused on locating and the location of the decoupling point (Banerjee, Sarkar, & Mukhopadhyay, 2012). Still others concerned themselves with the factors that affect the position of the decoupling point (Banerjee et al., 2012). When investigating how to control the movement of the decoupling point most studies indicated that

stability in the location of the decoupling point is important (Banjeree et al., 2012). As such, the focus of these studies is on how to use systems and processes to stabilize the location of the decoupling point (Christou & Ponis, 2009). In this stable position, there exists an ideal balance of cost reduction while still maintaining the flexibility to meet the needs of the customer (Wang, Lin, & Liu, 2010). In line with this study, Andreev and Panayotova (2013) suggested the application of project management principals and tools would be beneficial to the defining or redefining the location of the decoupling point. This study would build on the suggestions of Andreev and Panayotova (2013) and investigate the application of project management in the temporary relocation of the decoupling point under unique customer-driven demand conditions.

Problem Statement

The problem addressed was the removal or minimization of turbulence caused within the supply chain by the temporary relocation of the decoupling point which was a strategic response to a random customer-driven event (Kim et al., 2012). From a strategic perspective, the customer random event and the minimization of turbulence in the supply chain are both revenue impacting thus strategic in nature. The customer-driven random event will have impact on the revenue of the customer, as well as the firm, their supplier and their partners (Christou & Ponis, 2009). Failure to adapt to the needs of the customer as well as the turbulence caused by these types of random events will have a short-term impact on the customer's revenue as they will not be able to meet their project commitments. Additionally, this impacts the long-term revenue of the firm, as well as its partners and suppliers because the customer will be motivated to place future purchases with competitors. To address this problem, firms need a mechanism that will support the customer as well as the firm when these random events occur (Kim et al., 2012). The purpose of the mechanism is to provide temporary flexibility in the supply chain, allowing the re-

positioning of the decoupling point; the project manager is ideal for this role. This study introduced a project manager and the application of project management skills to temporarily relocate the decoupling point in response to the occurrence of customer-driven random events. The introduction of the project manager will add strategic value to the firm by allowing the supply chain to support the random customer event thus improving customer support and influencing future customer purchasing decisions.

Purpose Statement

The purpose of this qualitative hermeneutical phenomenological study was to investigate, understand, and describe the value of engaging a project manager to support a customer-driven project that creates a random supply chain demand event (Andreev & Panayotova, 2013). Specifically, such an event would require the temporary re-positioning of the decoupling point between the supply push and demand pull within the supply chain (Banerjee et al., 2012). In response to the challenges of this type of event, this study will focus on two specific project manager roles. First, the project manager would act as an extension of a customer-driven project and serve as a conduit for the voice of the customer (VOC) into the supply chain (Vlckova & Patak, 2011). Secondly, the project manager would employ his skills and manage the temporary relocation of the decoupling point (Andreev & Panayotova, 2013). The focused engagement of the project manager in these roles will provide the firm with a process that will be responsive to its customers and create a competitive advantage as well as meeting the strategic needs of the customer.

Nature of the Study

A phenomenological qualitative study was appropriate for this research because the study focuses on the essence of the participant's experiences (Creswell, 2013). In this study, the

participants are supply chain and project management professionals who engage in projects that require cross-functional, or matrix teams, to deliver an amicable solution. Specifically, to project managers the cross-functional or matrix nature of the project teams allows them to engage both elements of the firm and the customer in the development of the solution (Andreev & Panayotova, 2013). In this case, a qualitative hermeneutic phenomenology allows the researcher to examine the experiences of project managers in an effort to discover the strategic value of having them engage as the voice of the customer and the management of the temporary relocation of the decoupling point in response to customer-driven random events that occur that require additional flexibility in the supply chain (Stake, 2010).

The nature of this study is less about the testing of tangible objectives and more about an understanding of personal experience or human interactions (Creswell, 2014; Stake, 2010). As such, applying a quantitative method is not appropriate (Creswell, 2014). Thus, a qualitative methodology is the best fit for this study (Creswell, 2014).

As this was a qualitative study, there were five optional approaches or designs that could have been employed, narrative, phenomenological, grounded theory, ethnological, and case study (Creswell, 2013). A narrative approach focuses on the experiences of a specific individual (Creswell, 2013). This study focused on multiple project managers and their common experiences and did not focus on a single individual. The phenomenological approach seeks to understand the experience and its essences as seen by the participants in the experience, thus is the appropriate selection for this study (Creswell, 2013). A grounded theory approach is intended to use the data from the study in developing a new theory (Creswell, 2013). This study did not attempt to create or discern a new theory from the experiences of the participating program managers. An ethnological approach is focused on the cultural interactions of a

particular group (Creswell, 2013). This research was not focused on the common cultural connections between project managers in their decisions in reference to the decoupling point. Lastly, a case study is an in-depth description and analysis of an event that has occurred (Creswell, 2013). The participants in this study came from several different companies and a case study was not the best fit for this study.

A phenomenological approach has two types: transcendental and hermeneutical (Creswell, 2013). A researcher uses his own experience in the interpretation of the study results (Creswell, 2013). A hermeneutic phenomenology allows the researcher as the human instrument to utilize his 15 plus years of experience in a project management role interacting with customers and the supply chain procedures to interpret the data and provide a generalized voice to project managers (Creswell, 2013, 2014).

Research Question

The overarching question was: Does the introduction of a project manager add strategic value when customer-driven random events occur that require additional flexibility in the supply chain? The study also addressed two sub-questions as follows: First, does a project manager have the ability to add strategic value by extending the voice of the customer (VOC) deeper into the organization while effectively integrating the needs of both the customer and the supply chain in support of the strategic objectives of the firm? Secondly, will the engagement of a project manager in the management of the temporary relocation of the decoupling point minimize the potential for the bullwhip effect in the supply chain while meeting the customers' random and unique project need?

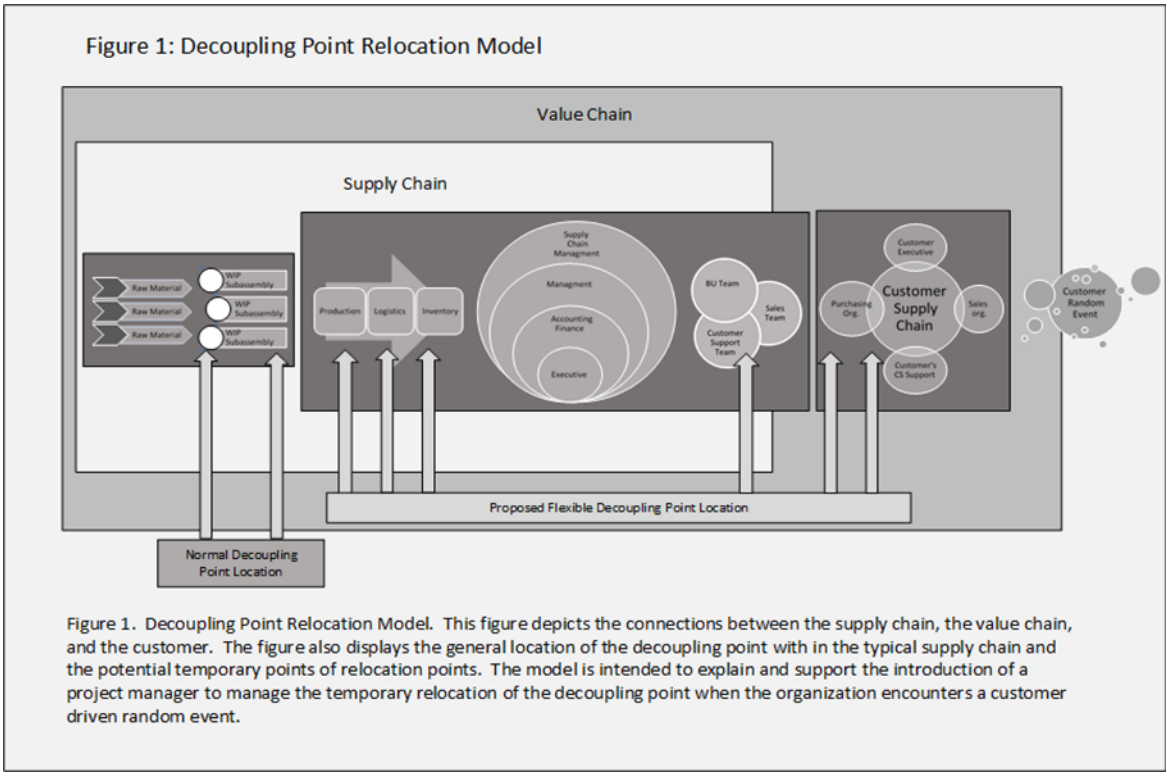

Figure 1. Decoupling Point Relocation Model.

Conceptual Framework

This study sought to investigate, understand, and describe the value of engaging project managers to support a customer-driven project that creates a random supply chain demand event (Andreev & Panayotova, 2013). However, it is important to understand the impact of engaging a project manager in representing the voice of the customer and managing the temporary relocation of the decoupling point. This understanding sets the foundation for the decoupling model. Figure 1 provides a visual depiction of the interaction of the supply chain with the customer in normal operations. The position of the decoupling point under normal circumstances is depicted by the arrows below and on the left of the model that are labeled normal decoupling point. This study investigated the engagement of a project manager to assist in temporarily relocating the decoupling point to the position of one of the six arrows depicted by the arrows on the bottom right of the decoupling model labeled proposed flexible decoupling

point locations. The motivation for the temporary position change is a customer-driven random event shown at the right side of the decoupling model.

The decoupling point within the supply chain is a boundary of stabilization. It is at this point that the supply pushes to meet the demand pull within a hybrid push/pull supply chain (Teo et al., 2012). Within the supply chain the decoupling point is tension that results from the push/pull forces within the hybrid supply chain (Teo et al., 2012). At the location of the decoupling point there is equilibrium or a stability that exists between the two forces (Pomeau & Villermaux, 2006; Taylor, 2011). When a customer-driven random event is introduced, it causes the boundary of stability or tension at the point of equilibrium to fail, resulting in a loss in stability (Pomeau & Villermaux, 2006; Taylor, 2011).

This tension is important because of the stability it provides at the point of contact between opposing forces with competing interest (Calvão & Brigatti, 2014). In the case of this study there is a need on the supply side of the supply chain to promote stability and control costs while at the same time the demand side of the supply chain needs to react to randomness and unpredictability in the marketplace (Kim et al., 2012). Within the supply chain, once the decoupling point is established and the boundary stability between the push side and the pull side of the supply chain are set, there is stability that many supply chain organizations are hesitant to disturb (Banerjee et al., 2012). Because of the need for stability once the optimal location of the decoupling point is set, it is hard to relocate quickly, especially for a temporary short-term requirement (Andreev & Panayotova, 2013). To do so could have destabilizing effects within the supply chain as the relocation of the decoupling point breaks the existing surface tension between the supply push and the demand pull within the supply chain (Dansong & Wenxue, 2005). Within the decoupling model, the decoupling point location and its possible positions of

temporary relocation must be implemented in such a way as to maintain the stability and integrity of the supply chain (Andreev & Panayotova, 2013). At the very least there needs to be a controlled relocation process that allows the organization to maintain the boundary of stability while the temporary changes are executed (Pomeau & Villermaux, 2006; Taylor, 2011).

This investigation is reliant on several theories for support. From a theoretical perspective first consider systems theory. Systems theory suggests that there exist both loose and strong couplings between components and participants within an organization, in the case of this study a supply chain (Casson & Wadeson, 2013; Xue, Zhang, Ling, & Zhao, 2013). A systems approach seeks to harmonize the non-linear interactions at the micro level of an organization in an attempt to deliver a synchronized response at the macro level of an organization (Dansong & Wenxue, 2005). As such, a systems view should be taken when observing the interaction and outputs of a supply chain (Casson & Wadeson, 2013). This systems understanding and approach address the need to maintain the boundary of stability between the competing forces of the supply chain (Casson & Wadeson, 2013). The understanding that a systems approach provides, enables the organization to develop a controlled process that will maintain the boundary of stability while temporarily relocating the decoupling point (Pomeau & Villermaux, 2006; Taylor, 2011).

Next, agency theory takes a narrower view and seeks to explain the nature of relationships that exist between individuals or entities (Xue et al., 2013). In agency theory, there is an agent that engages and acts on behalf of or in the best interest of a principal (Belzer & Swan, 2011). As such, there is an agency relationship between the firm, the supply chain organization, and the customer depicted by the decoupling model when the value chain and the supply chain are viewed as a system (Belzer & Swan, 2011). Specific to this study, the principal

is the customer and the agent is the firm as well as its supply chain. Agency theory also points out the principal and the agent have competing interests (Belzer & Swan, 2011). As such, the challenge for the principal is how to monitor the agent to ensure he delivers as per the agreement, which the interests of the principal are met, and when possible align with interests of the agent (Belzer & Swan, 2011). Further, it is recognized that within the supply chain and the value chain there are multiple agent/principal relationships (Belzer & Swan, 2011). As a way to harmonize the interests of both the principal and the agent, especially in a provider/client relationship, it is advantageous to encourage mutual involvement and frequent interaction as a control or monitoring mechanism (Manning, Lewin, & Schuerch, 2011). One suggestion is to use client services as a neutral participant to bridge the gap between the agent and the principal (Manning et al., 2011). The project manager in this study acts as change agent that negotiates the competing interests of the customer and the firm or its supply chain.

Specifically, this research is interested in the role of the project manager as change agent that is the responsible party in the management of the temporary relocation of the decoupling point (Andreev & Panayotova, 2013; Xue et al., 2013). In the role of change agent, the project manager is responsible for acting in the best interest of both the customer (principal), the supply chain participants (agent), and the organization (agent; Manning et al., 2011). In short, the project manager would harmonize the interests of both parties in the agency relationship while at the same time promoting flexibility within the agent organization (the firm and the supply chain; Manning et al., 2011). The project manager would also manage the temporary relocation process in a way that allows the organization to maintain the boundary of stability while the temporary changes are executed (Belzer & Swan, 2011; Pomeau & Villermaux, 2006; Taylor, 2011).

Lastly, by synthesizing the previous discussion of the decoupling point, systems theory, and agency theory into one unified theoretical foundation in support of the decoupling model for the study, one would find the application of the theory of complex adaptive systems (CAS) most applicable (Dansong & Wenxue, 2005). CAS as a theory is derived from biology, dynamic systems, and artificial intelligence, in addition to its connection with traditional supply chain theories like agency theory and systems theory (Dansong & Wenxue, 2005). In a CAS environment, agents act with relative autonomy with few limitations, and they provide process flexibility (Marchi, Erdmann, & Rodriguez, 2014). With CAS, strategic improvements are discovered by manipulating, devolving, or recombining interactions between agents (Marchi et al., 2014). CAS drives the organization, in the case of this study the supply chain, to evolve and improve over time in such a way that strategic advantages result as the firm becomes more competitive (Marchi et al., 2014). From a theoretical perspective, CAS is able to support the entire decoupling model to include the random events outside the purview of the supply chain (Dansong & Wenxue, 2005).

A CAS approach understands the need to maintain the surface tension between competing forces such as order and chaos or in the case of this study supply push and demand pull (Marchi et al., 2014). It is the perfect theoretical foundation for the management of the push/pull supply chains that require flexibility in the location of the decoupling point (Marchi et al., 2014). CAS views the supply chain as an integrated dynamic system. In short, CAS also takes into account the non-linearity of the supply chain at a micro level and advocates a systems approach for the physical action of relocating the decoupling point while maintaining stability within the supply chain (Dansong & Wenxue, 2005). CAS dictates that intervention is essential to the evolution of the system (Marchi et al., 2014). CAS also acknowledges the value of

engaging a project manager as an agent of the supply chain, the customer, and the organization to support a customer-driven project that creates a random supply chain demand event (Andreev & Panayotova, 2013; Marchi et al., 2014). Specific to this study is the value of engaging a project manager to those customer projects, or customer-driven random events that threaten the boundary of stability the decoupling point represents (Belzer & Swan, 2011; Pomeau & Villermaux, 2006; Taylor, 2011).

Definition of Terms

Assemble to Order (ATO): Assemble to order system is similar to a make to order system. The difference is that a firm will manufacture the sub-assemblies for its products and only complete final assembly when an order is received from the customer (Kaminsky & Kaya, 2009).

Decoupling Point: The decoupling point is the same as the push-pull boundary which is the point in the supply chain where the supply push and the demanded pull of the hybrid or push-pull supply chain meet (Andreev & Panayotova, 2013).

Hybrid Supply Chain: Is another name for a push-pull supply chain where the supplies are pushed forward in the supply chain as raw materials and sub-assemblies where at a given point customer demand will pull the final product from manufacturing and into finished goods (Rafiei & Rabbani, 2012).

Make to Order (MTO): Make to order systems build to the customers' specification and only begin the manufacturing once an order is received from the customer (Kaminsky & Kaya, 2009).

Push-Pull Boundary (PB): The push-pull boundary is the point in the supply chain where the supply push and the demanded pull of the hybrid or push-pull supply chain meet (Kim et al., 2012; Lu, Yang, & Su, 2012).

Push-Pull Supply Chain: In a push-pull supply chain the supplies are pushed forward in the supply chain as raw materials and sub-assemblies where at a given point customer demand will pull the final product form manufacturing and into finished goods (Kim et al., 2012).

Work in Process (WIP): Work in process is production work that is staged between raw materials and finished goods (Kaminsky & Kaya, 2009; Rafiei & Rabbani, 2012).

Assumptions, Limitations, and Delimitations

Assumptions

There are several assumptions that are made during this study. First is the organizations, as well as the individual participants of this study, share a common understanding of a hybrid supply chain, the role of a project manager, the core competencies of a project manager, and the desire to be customer focused. To mitigate the risk of this assumption the study will need to state and establish a common understanding across the study participants. This harmonization will be accomplished by surveying the potential participants' definitions of a hybrid supply chain, the role of a project manager, the core competencies of a project manager, and customer focus. This will allow the study to establish commonality and then use this information to validate the participants' experiences.

The second assumption is that the occurrence of a customer-driven random event is infrequent. Should the study discover the frequency of customer-driven random events is high, there are two actions to be considered. Consideration should be given to the definition of a customer-driven random event. The study definition may be too broad and needs to be narrower. A second option is there exists a process issue within the study organization. If so, this will need to be addressed before the study continues.

The third assumption is the displacement of the decoupling point will have a ripple effect within the supply chain that may have negative implications. If this is found not to be true then it is plausible the supply chain in question does not fit the definition of a push pull supply chain. In this case, the supply chain in question should be excluded from the study.

It is also assumed that a supply chain will always seek stability in a chaotic environment and once stability is achieved the supply chain will resist change. If this is found to be true then it is plausible the supply chain in question does not seek efficiency and is mismanaged. In this case, the supply chain in question should be excluded from the study.

Lastly, it is assumed the temporary relocation of the decoupling point will result in long-term strategic benefits to the firm that manages the supply chain. If this is found to be false, then the study would suggest there is no value-add in moving the decoupling point or engaging a program manager in these specific situations. In this case, the study would be successfully disproven.

Limitations

Specific to this study there were several limitations that were considered. First, there was the solicitation of information that was considered confidential and for internal use only. This limitation existed as some of the information this study was soliciting was considered by the participant's organization to be proprietary or have strategic value for competitors if disseminated outside the organization. The second was the ability of study participants to engage with candor and objectivity. This weakness was influenced by the participants' organizations' level of commitment to the study. Next was a common understanding of definitions of hybrid supply chain, the role of a project manager, the core competencies of a project manager, and customer focus across the study participants. Another limitation was the

degree of variation from one study participant to another (e.g., it is likely that each participant's organization has a different location for the decoupling point as compared to the other participants). Lastly, as this was a qualitative study, at some point there was need to for validation of findings using quantitative devices.

Delimitations

The scope of this study was limited to the value of engaging a project manager in the management of the temporary relocation of the decoupling point. The objective was the project team minimized the potential for the bullwhip effect in the supply chain while meeting the customers' random and unique need to expedite the delivery commitment. More specifically, the scope of this study and the role of the project manager was the agent of responsibility with regards to balancing the strategic needs of the organization, the supply chain, and the customer. The project manager will also be responsible for organizing a team that can manage the temporary move of the decoupling point with minimal negative impact to the supply chain while still supporting all stakeholders. Lastly this study was limited to organizations, in the United States of America (USA), that use their supply chains and value networks in support of channel distribution to end customers in the USA.

Significance of the Study

Reduction of Gaps

At a macro level the survival of any firm or organization is dependent on its ability to adapt quickly to an ever-changing environment (Marchi et al., 2014). In order to be adaptive, firms must be able to navigate complex non-linear environments where chaos is ever present (Dansong & Wenxue, 2005; Marchi et al., 2014). Additionally, organizations, specifically supply chains, are dynamic and respond to change in a non-linear way, many times resulting in

the bull whip effect (Dansong & Wenxue, 2005). In the case of this study, the CAS theory advocates the engagement of an agent in the reconfiguring of organizational interactions as an adaptive response to chaotic challenges in the operational or competitive environment (Marchi et al., 2014). To this point and specific to this study Andreev and Panayotova (2013) suggested that project management skills would be applicable in the locating or the temporary relocation of the decoupling point in the supply chain. The gap is that no particular role within the organization or the supply chain has been established to manage this process. This study seeks to investigate the appropriateness of a project manager to fill this role.

Specifically, this study will provide significance by applying a project management approach to address customer-driven randomness that impacts the demand channel of the supply chain. This study will make a contribution to the existing literature as there is minimal literature regarding the engagement of project managers and the application of project management skills in an effort to develop temporary flexibility in the location, or temporary re-location, of the decoupling point in support of customer project requirements (Kim & Ballard, 2002). Next, this study provides a firm with a way to introduce strategic flexibility into its supply chain specifically as it relates to customer support, penetration of voice of the customer (VOC) into the supply chain, and the decoupling point location. Finally, the introduction of a project manager in support of the customer will enhance the effectiveness of supply chain operations as well as the strategic support that a firm offers its customer and vendor (Dumitru, 2011).

Implications for Biblical Integration

How is man to serve the Glory of God? In Genesis God instructs man to subdue, manage, and grow his creation (Genesis. 1:28-31 NIV). This would imply that believers should use their gifts and creativity to the service of others in support of his work mandate in Genesis

(Genesis. 1:28-31; 1 Peter. 4:10 NIV; Van Duzer, 2010). As interpreted by Van Duzer (2010), God instructed man to be a good steward, flourish, and do so creatively. This would imply that man would use his talents to cultivate resources that serve God and his creation which includes the community of man (Van Duzer, 2012). Further man's support of community and God's work mandate should be seen today in the way business is conducted.

Van Duzer (2010) suggested the purpose of business is to serve by bringing people together in a relationship that allows them to engage creatively in meaningful work while in support of God's glory. God encourages his followers to engage in a community of supportive and encouraging relationships so that they may sustain his creation until his return (Hebrews, 10:24-25 NIV). There is no mention of profit in God's instructions or his mandate to work (Van Duzer, 2010). In the case of this study, the temporary repositioning of the decoupling point allows the organization to better support the customer in a creative endeavor while still promoting a profit that can be reinvested in sustaining and growing the Kingdom (Eldred, 2009; Olhager, 1994, 2003; Sun, Ji, Sun, & Wang, 2008). Additionally, the ability to meet the customer's needs advances a supportive relationship and provides further opportunities to present Godly values to customers in addition to helping them profit (Eldred, 2009; Sherman, 2011). The profit is not the end but the means by which man may continue in sustainable service to God's will (Van Duzer, 2012). This understanding differs from Friedman's statement about the purpose of business being to maximize returns while being accountable to its stakeholders (Schwartz & Saiia, 2012). It would seem that Friedman's mandate is only an interim step in meeting God's mandate to serve.

Specifically, in the case of this study the introduction of a project manager promotes a collaborative approach to conducting business. The purpose of the collaboration is to work

creatively at making the business more competitive. Collaboration is made possible by the relationship building that supply chain management and project management encourages. Within a collaborative supply chain and in the field project management, there also exists an element of service to the customer as well as supply chain partners. This element of service creates the trust that allows for sustainable relationships (Griffith, Myers, & Harvey, 2006). It is through sustainable relationships that the glory of God is advanced and the future of the business is secured.

Relationship to Field of Study

This study investigated the challenges caused by the competing requirements of the supply chain management model with the need to support a customer project. In the case of this study the project is in response to a customer-driven random event that will insert an added degree of uncertainty into the supply chain. From the perspective of the supply chain, especially in a make to order (MTO) or assemble to order (ATO) model, there is a specific point that is optimal for balancing the minimization of cost and the maximization or flexibility (Kaminsky & Kaya, 2009). This point is called the decoupling point (Kim et al., 2012). Unfortunately, once the optimal location of the decoupling point is set it is hard to relocate quickly, especially for a temporary short-term requirement (Andreev & Panayotova, 2013). An example of a temporary relocation is a single opportunity scenario such as a nonconforming order requirement from a customer's project (Andreev & Panayotova, 2013).

Specifically, this study investigated the value of introducing a project manager that sought to develop temporary flexibility in the location of the decoupling point in support of the customer’s project requirement (Andreev & Panayotova, 2013). The ability of a project manager to assemble a diverse and cross-functional team in support of a strategic project will be equally

applicable in support of a customer's strategic project (Xu, Ming, Song, He, & Li, 2014). At the same time the project manager will also promote a unified systems focus on the repositioning of the decoupling point in support of the customer's project (Xu et al., 2014). In short, the applicability of introducing a project manager and project management skills in support of non-standard customer requirements will be investigated (Abramovici & Bancel-Charensol, 2004). Additionally, it is expected that the inclusion of a project manager in this capacity will provide firms with additional strategic support for their customers (Wellman, 2012).

A Review of the Professional and Academic Literature

In response to the research question, the literature review was conducted to determine the types of research currently available and to determine the issues that were central to minimizing the turbulence that is caused within the supply chain as the decoupling point is temporarily relocated due to a random customer event. Further, the review endeavored to understand the value of engaging a project manager to manage the temporary relocation of the decoupling point by considering the body of knowledge that has been established by previous studies as well as the theoretical support for such an engagement. As intended, the literature review has helped to define key topics and concepts surrounding the study as well as to demonstrate where the study fits within the current body of research (Creswell, 2014).

There are several themes from the literature that are cogent to the study thesis. These themes form the thematic pillars on which the study is constructed. Thus, the literature review is segmented into the five concentric thematic pillars that are integral to the study: a) competitive strategy and operations, b) the value chain, supply chain, and decoupling point, and c) application of project management. Conjointly with the dissection of each of the foundational thematic pillars, is the presentation of applicable theories that support the study. With the

progression of the examination, from one thematic pillar to the next, there is also a migration from a macro to a micro perspective as the literature focalizes the interdependent relationship of the themes. The synergies between the thematic pillars create the schema that buttresses the proposed engagement of a project manager in the abatement of the turbulence that results from the temporary relocation of the decoupling point.

Competitive Strategy and Operations Strategy

Occasionally, a customer impacting random event occurs in the customer's competitive environment that negatively impacts the delivery requirement for a customer's sales order (Andreev & Panayotova, 2013). Thus, the customer is motivated to request a non-conforming delivery expedite for their sales order date requirement (Andreev & Panayotova, 2013; Lui, 2011). In the event the new request date on the customers expedite request is inside the published standard lead-time the supplier chooses one of two options, rigidly adhere to the published standard lead-time or to temporarily relocate the decoupling point in an effort to generate the flexibility needed to support the customer expedite request (Christou & Ponis, 2009).

In this scenario does the customer's request represent a strategic issue for the supplier (Ansoff, 1980)? Ansoff (1980) argued an issue is considered strategic when its occurrence, either internally or externally, will impact the firm's ability to meet its strategic objectives. As a seminal investigation of what defines strategic as it relates to issues, Dutton, Walton, and Abrahamson (1989) found that economic costs were important to the definition of strategic. Applying the Ansoff (1980) definition of a strategic issue, objectives or goals are fundamental measures of whether an issue is strategic, further the objectives or goals also serve as the strategic metric for the firm (Patten, 2015). According to Rumelt (2001), objectives are the

result of what a strategy defines as important and becomes the focus of the firm's resources. As such the strategic value of engaging a project manager to coordinate the temporary relocation of the decoupling point as an accommodation for unplanned customer demand is reflective of the firm's ability to focus resources in support of its strategic objectives (Rumelt, 2001).

Strategy. Strategy, in a historical context, was borrowed from the military; it refers to the design or plan for the application of resources in the attainment of valuable objectives that cumulatively over time leads to the achievement of what the organization envisions as success (Bogdan, 2014; Lee & Lee, 2012; Singh, 2012). Strategy, as defined by Chandler (1962), is the setting of long-term goals and objectives by a firm in conjunction with the allocations of resources as well as defined actions in attainment of the long-term objectives (Teryima & Aondona, 2014). Mintzberg (1978, 1979) suggested that strategy is nothing more than a simple plan, and depending on one's perspective is the calculus of deliberate sequential decisions or the result of them. Regarding strategic objectives, Andrews (1971) suggested they are a result of the strategy that is formulated (Hax & Majluf, 1988). In a study of strategy as a concept and strategy formation, Hax and Majluf (1988) acknowledged while there exists a plethora of strategy formation concepts, they each are capable of delivering the objectives the strategy defines.

Academically the proponents or theorists of strategy can be segregated based on their methodology for strategy formations (Mintzberg, 1978, 1979). As the seminal proponent for the study of strategy formation, Mintzberg (1979) classified strategy drivers into stratum and the strategy formation into schools (Khalifa, 2008; Mintzberg & Waters, 1985). Ansoff (1965) endorsed strategic planning as the preferred method of strategy formation and as a result was a proponent of what Mintzberg and Waters (1985) described as the planning school of strategy formation (Bogdan, 2014; Mintzberg, Ahlstrand, & Lampel, 1998). Supporting the idea of a

planning school of strategy formation, Brews and Hunt (1999) validated the existence of a formal relationship between performance and planning (Slater, Olson, & Hult, 2006). With regards to competitiveness and specifically related to this study, there is the positioning school of strategy formation as represented by the contributions of Porter (1985a) with the concept of competitive advantage, the five forces model, and the generic strategy (Bogdan, 2014; Claudiu, Andrei, & Gabriela, 2011; Mintzberg et al., 1998). Although the positioning school is very similar to that of the planning and design schools, the positioning school argues that a firms' position in the market place is a key element in strategy formation (Mintzberg et al., 1998). The tools that Porter (2014) presented allowed the firm to determine its position as well as the formation of the appropriate strategy for that position while in the pursuit of a competitive advantage (Porter & Kramer, 2014).

Strategy in its holistic form is referred to as corporate strategy, which is responsible for setting the vision, mission, goals, and objectives to the complete enterprise (Cruz, Chebbi, & Chtourou, 2011; Teryima & Aondona, 2014). Corporate strategy, according to several strategists like Andrews (1971) and Thietart and Xuereb (1997), is comprised of two levels, competitive strategy and operational strategy (Cruz et al., 2011; Hax & Majluf, 1988; Teryima & Aondona, 2014). Competitive strategy is responsible for defining the product offering for the firm, focusing the firm on its external environments, and addressing how the firm will compete (Cruz et al., 2011; Hax & Majluf, 1988; Teryima & Aondona, 2014). In contrast operations strategy is responsible for the internal environment of the firm, the applications of best business practices to govern the firm's internal interactions, and to syncretize the organization in support of the firm's competitive strategy (Cruz et al., 2011, p. 187; Hax & Majluf, 1988; Teryima & Aondona, 2014). Holistically the combination of the firm's competitive strategy and the firm's operations strategy

deliver the objectives set by the firm's corporate strategy (Cruz et al., 2011; Hax & Majluf, 1988; Teryima & Aondona, 2014).

Competitive strategy and operations strategy forge the purposeful industry that allows the firm to be competitive. Management should first recognize what the market desires (competitive strategy), then make it possible (competitive strategy and operations strategy), and finally deliver it to the customer (operations strategy; Drucker, 1954; Shivakumar, 2014). In support of Drucker (1954), Rumelt (2011) argued that businesses are successful when management, decides what its customers desire (competitive strategy), then aligns its resources in support meeting that desire (competitive strategy and operation strategy), and finally focuses all action on filling that desire (operations strategy; Shivakumar, 2014). Rumelt (2001) also postulated that good strategy is the summation of a well-informed diagnosis of the competitive environment (strategic), followed by the exercise of guiding policies that consistently focus the organization to the one best overall position to effetely address the identified challenge (strategic and operational), and finally the disciplined execution of coherent action in response to the identified challenge (operational).

Competitive strategy. In the context of the earlier scenario the firm still needs to determine if the issue is strategic. To this point the literature has revealed an issue to be strategic when it significantly impacts the firm's ability to achieve its strategic objective (Ansoff, 1980; Dutton et al., 1989). The literature has also suggested that strategic objectives are resultant of the strategy formation (Andrews, 1971; Hax & Majluf, 1988). Lastly, corporate strategy is a summation of the firm's competitive strategy and operations strategy (Andrews, 1971; Cruz et al., 2011; Hax & Majluf, 1988; Teryima & Aondona, 2014; Thietart & Xuereb, 1997).

A positive relationship exists between the performance of a business and the successful deployment of an accurate well designed competitive strategy (Kirca, Jayachandran, & Bearden, 2005; Lee & Lee, 2012; Matsuno & Mentzer, 2000; Olson, Slater, & Hult, 2005; Strandskov, 2006; Vorhies & Morgan, 2003). A firms' value position explains that a successful competitive strategy is one that drives the firm to deliberately engage in being different (Porter, 2014; Porter & Kramer, 2014). Further the formation of competitive strategy is a process, a strategic decision process (Fredrickson, 1986).

Fredrickson (1986) referred to the opening step as the process initiation. In terms of a strategic road map, David (1989) used this step for the development of the vision and mission statement. Next is the performance of the situational analysis, gathering information about both the internal and external environment (Slater et al., 2006). The application of the Porter (1980) Five Forces Model of Competition in the analysis of the external environment and the Boston Consulting Group (BCG) matrix for the analysis of the internal environments is suggested (David & David, 2015; Slater et al., 2006; Teryima & Aondona, 2014). Next, the long-term strategic objectives are set (David, 1989). The strategic objectives result from the strategy formation process to provide the firm with direction and purpose (Andrews, 1971; Chandler, 1962; Hax & Majluf, 1988). Once objectives are set the strategy formation process will move to evaluate the strategy options and then further to the strategy implementation step (Hax & Majluf, 1988). Lastly, is to measure and evaluate the performance of the strategy (Hax & Majluf, 1988).

Porter (1991) advocated the application of the five forces model as method of understanding the structure of a given industry and the firm's position in the competitive environment. The competitive forces in the model are, threat of new entrants, the suppliers bargaining power, the customers bargaining power, existing industry rivalry, and the threat of

product or service substitution (Porter, 1991). Once the firm understands its competitive scope or industry position, relative to its competitors, suppliers, customers, product offering, and the geographic location of the competitive engagement, it can then understand the firm's competitive advantage (Porter, 1991).

In a competitive environment the competitive advantage the competitive strategy seeks is temporary, thus its duration is unpredictable (Eisenhardt, 2002; Khalifa, 2008). As such, in a competitive environment a competitive strategy will need to be agile and flexible (Heng, Xu, Jianqi, & Xinglu, 2013). Heng et al. (2013) further suggested that flexibility, in terms of competitive strategy, is a critical dynamic capability. Once the firm understands its position and competitive advantage, it will then choose one of three competitive strategies (Porter, 1985b, 2008). The firm can focus on being a cost leader by becoming a low-cost producer (Porter, 1985b, 2008). As an alternative, the firm may wish to seek a strategy of differentiation, where it accentuates its uniqueness within the industry (Porter, 1985b, 2008, p. 13). Finally, the firm implemented a focused strategy, where it takes a narrow competitive focus by serving a small exclusive segment of the industry at the exclusion of others (Porter, 1985b, 2008).

The objectives that result from the competitive strategy will influence all downstream decisions at the operational and tactical levels of the firm (Shivakumar, 2014). The success of the competitive strategy is dependent on the firm to develop a competitive advantage by maximizing its strengths and minimizing its weaknesses more efficiently than their competitors (Sitawati, Winata, & Mia, 2015). Because the organizations will be competing in a complex and uncertain environment, a systems or multidimensional approach is required (Chen, Fabozzi, & Huang, 2013).

As proposed by this study, the engagement of a project manager in the temporary relocation of the decoupling point is strategic, thus reflecting the competitive strategy as well as impacting the competitive strategy. In the scenario proposed in this study the support of the customer's request by the firm is in line with the competitive strategy of the firm. At the same time the engagement of the project manager in the temporary relocation of the decoupling point allows the firm to be agiler and more flexible, thus making the firm more operationally competitive.

Operations strategy. Just as the interdependencies of the competitive strategy and operations strategy are key to the success of the firm's corporate strategy, they also represent two competing perspectives (Chan, 2005; Singh, 2012). Just as competitive strategy focuses on how the firm will compete in the marketplace the operational strategy focuses the firm on aligning its operations in order to be competitive (Bereznoi, 2014; Carver & Kipley, 2010; Magretta, 2002). Corporate strategy (competitive strategy plus operational strategy) has a cost associated with it, one side of the strategy equation will cost time and the other will cost money (Iyer, Srivastava, & Rawwas, 2014). Firms design their processes to control costs, as a result of these cost controls, the lead-time for product deliveries to the customer are increased (Shao & Dong, 2012). At the same time the customer is demanding that the firm delivers in ever shorter lead-times which results in increased production and increased logistics costs for the firm (Shao & Dong, 2012). In the search for a competitive advantage, the firm has to balance or normalize the needs of all of the stakeholders against its resource and cost constraints (Spector, 2011). The goal of the operations strategy is to align the firm's organizational elements in a way that will maximize the use of resources while minimizing the overall costs (Iyer et al., 2014). If the firm as a system

can execute better than its competitors then it will generate a competitive advantage and thus support the competitive strategy (Teryima & Aondona, 2014).

Thus, the firm's view of the customer is both strategic and operational as such disparities exist between the two perspectives (Chan, 2005). The operational constraints within the firm seek to minimize the occurrence of tangible costs, conversely there is also a strategic commitment to serve the firm's customers (Chan, 2005; Singh, 2012). By its support of the strategy and its objectives the firm will in time normalize the two perspectives (Cadden, Humphreys, & McHugh, 2010; Millet, Schmitt, & Botta-Genoulaz, 2009; Rimienė, 2011). To this end, Porter (2008) suggested the majority of cost drivers are structural and can be controlled by the firm thru organizational governance, structure, and operational process (Porter, 1985a, 1985b, 2008).

Jung and Jeong (2012) suggested the organization's operational perspective will have a short-term time horizon of less than one year. Operational actions do not significantly impact the scope of the firm (Shivakumar, 2014). At the same time, operational actions will address the routine process oriented interactions of the firm, as well as the integration of the customer focused interactions (Jung & Jeong, 2012; Shivakumar, 2014). The short-term operational activities are performed in support of the strategic goals set by the firm's management team and precipitate from the corporate strategy (Wang, Chan, & Pauleen, 2010).

It is important to make a distinction between strategy (corporate, competitive, and operational) and the business model. In broad terms, strategy defines how the firm will engage competitors for the attention of potential customers (Bereznoi, 2014; Carver & Kipley, 2010; Magretta, 2002). Further operational strategy defines how the elements of the organization will align as a system in the competitive effort (Spector, 2011). The business model, on the other

hand, does not consider the firms' competitors, as a framework it focuses on aligning the organization as a system of delivering value to the customer (Magretta, 2002; Spector, 2011). The business model provides organizational structure that will allow for a systems approach to the way the firm interacts with clients (Helgueros, 2012).

From a competitive perspective, the successful performance of a firm is dependent on the quality of the fit between the strategy, the organizational structure, the human element, and the organizational resources (Miles & Snow, 1984; Slater et al., 2006). Miles and Snow (1984) described a successful fit as being tight, and they further suggested that there are four stages that support a tight fit. The first stage of a tight fit is to have the structure and processes required to support the chosen strategy (Miles & Snow, 1984). The second stage is the existence of simple procedures to communicate strategy, goals, objectives, processes, and control systems that will lead to unified widespread understanding (Miles & Snow, 1984). The third stage is the need for elaborate coordination procedures which are reduced by the aforementioned simplicity (Miles & Snow, 1984). The fourth stage is the successful performance of the organization will reinforce the tightness of fit between the strategy, organizational structure, and the business processes. As a system, the tightness of fit between the strategy and the organization is fortified by the firm's core values and core competencies, thus allowing the firm to generate an additional operational or competitive advantage (Bigler & Williams, 2013; Miles & Snow, 1984).

Strikwerda and Stoelhorst (2009) pointed out the strategy of the organization precedes the structure of the organization. This is important as the strategy of the firm will drive the operational strategy, the goals, and the processes that govern the firm (van Marrewijk, 2004). The decisions made at the strategic level precipitate thru the organizations business model to the

point where they influence all decisions at the operational and tactical levels of the firm (Shivakumar, 2014).

The focus of the current study is to explore the value of engaging a project manager in the temporary relocation of the decoupling point when demand is impacted by an unforeseen customer event. In this scenario does the customer's request represent a strategic issue for the firm (Ansoff, 1980)? Ansoff (1980) proposed that an issue is considered strategic when its occurrence, either internally or externally, will impact the firm's ability to meet its strategic objectives. In summary, the literature reviewed in this section has shown the connective thread of strategy from the external competitive environment, to the firm's strategic orientation thru its competitive and operational strategies. The next section will focus on the operationalization of corporate strategy.

Operations management. As a function, operations management is the mechanism that allows the firm to support success while minimizing risks, it is the intermediary between the competitive strategy, operations strategy, organizational structure, and business processes (Miles & Snow, 1984). At an operational level the firm seeks to create customer value while generating a profit, at the same time providing stability for the controlled use of existing resources (Bereznoi, 2014). Klasson and Olm (1965) argued that in the future the firm's ability to add value and create a profit would be dependent on the firms' ability to take an integrated or systems approach in its operations management. Historically there has been a difference in perspective between the outward facing competitive functions such as marketing and the inward facing functions such as production and manufacturing (Schniederjans, Cao, & Ching Gu, 2012; Song, Montoya-Weiss, & Schmidt, 1997). Song et al. (1997) presented five barriers to cross-functional cooperation, differences in the personalities between functions, cultural differences

between functions, differences in functional language, physical barriers, differences in organizational responsibilities and systems of rewards. It is the role of operations management to unify these perspectives in support of the firms' competitive strategy (Klasson & Olm, 1965; Schniederjans et al., 2012; Skinner, 1969; Song et al., 1997). To this end operations management will seek to advance six competitive priorities, the quality of the products or services being offered, the reliability of delivery commitments, operational flexibility, the book to ship time interval (speed), be a low-cost provider, and innovation (Drohomeretski, Gouvea da Costa, Pinheiro de Lima, & Garbuio, 2014; Slack, 1991).

Smith and Robey (1973) discussed operations management in terms of balance of production between assembly lines, the scheduling of production, and as a system the dissemination of production information. From a classical perspective operations management focuses on the activities of leading, organizing, planning, and controlling (Adam, 1983). Within operational management there are two scientific approaches, a behavioral approach that helps to understand people as well as organizational interactions, and a systems approach that allows the manager to capitalize the interconnected strengths of the organization (Adam, 1983). As defined by Stevenson (2012), operations management is the administration of both processes and systems in the support of product creation and services delivery.

Business operations at its foundation are the logical flow of actions within the business, as well as the organizational structure, and business processes (Bereznoi, 2014). The management of operations will accentuate the capabilities, activities, and actions in which the firm excels (Hsu, Tan, Kannan, & Keong Leong, 2009). In its origin, operations management was narrowly focused on costs, now the focus has been broadened to include customers and asset management (Kleindorfer, Singhal, & Van Wassenhove, 2005). A quality perspective the roles

of operations managers and supply chain managers are in the process of merging responsibilities (Foster & Ogden, 2008; Mehta, 2004). At the same time, operations management is broadening its stakeholder view to include a customer perspective (Foster & Ogden, 2008; Robinson & Malhotra, 2005).

In a globally competitive marketplace a business navigates the competing interests of its stakeholders, in an effort to cultivate a shared vision, while maneuvering to create a competitive advantage in the marketplace (Enyinna, 2013). Firms have stakeholders at many levels both internal and external to include, individuals, teams, organizations, as well as societal elements (Doh & Quigley, 2014; Song et al., 1997). The most common stakeholders are the government, competitors, shareholders, customers, suppliers, employees, and the greater society (Mishra & Mishra, 2013). Internally operations management seeks an approach that will focus the applicable stakeholder on the operational competitive priorities that allow the firm to maximize opportunity for success while minimizing its exposure to risk (Carmichael, 2013; Drohomeretski et al., 2014). As the external environments have become more competitive, operations management seeks more integration with both upstream and downstream stakeholders (Narasimhan, 2014). As a result of this broader focus, firms engage in global operations, outsourcing, global facilities planning, and give increased consideration to risks of operational exposure (Narasimhan, 2014). Considering the integration of the firm's stakeholders into the purview of operations management Klasson and Olm (1965) suggested the characteristics of this systems approach will be the existence of unified performance objectives, an integrated management structure, integrated decision making, integrated information management systems, and operational monitoring (ordering, scheduling, and delivery).

Hult (2011) pointed out the actions or activities of the individual stakeholders may not always be complementary, thus the need for a systems approach to stakeholder interaction. A stakeholder, as previously defined, is a key component when operating the business as a system (Fernando & Lawrence, 2014; Zenko, Rosi, Mulej, Mlakar, & Mulej, 2013). A systems perspective allows for the orchestration of the organization operations in support of a defined strategy, stakeholders requirement, stakeholders action, and the interactions of stakeholders with the firm (Miller, McAdam, & McAdam, 2014; Mishra & Mishra, 2013; Zenko et al., 2013).

In the pursuit of strategic objectives, operations management maintains a multidimensional perspective focusing on its costs, revenue, and more importantly the interests of its stakeholders (Drohomeretski et al., 2014; Mishra & Mishra, 2013; Slack, 1991). However, as Enyinna (2013) pointed out, there are some ethical considerations when attending to multiple stakeholders, such as how does one harmonize or prioritize the plethora of competing stakeholder interests with the firm's strategic objectives. Is an investor in the organization more important than say the workers with sweat equity in the firm, or even the community at large that supports the organization? There are those that would suggest the organization or the firm is in business to make a profit for the investors with minimal consideration of any other stakeholders (Schwartz & Saiia, 2012). In an effort to optimize the balance between risk and reward for all of the stakeholders as well as the firm, the operations management will apply systems approach in developing solutions that go beyond focusing on just a small segment of its stakeholders (Jer-San, Ying-Mei, & Tai-Yuan, 2013; Lee & Lee, 2012). A systems approach helps insure the greatest equity for the stakeholders while allowing the firm to capitalize on the interconnectedness of the stakeholders in an effort to advance the firm's value proposition beyond a revenue and profits (Hult, 2011; Jer-San et al., 2013; Lee & Lee, 2012). Kleindorfer et

al. (2005) referred to operations that focus beyond profit as sustainable operations management, where the firm's metric of success is the triple bottom line (3BL or 3Ps: people, profit, planet). The employment of sustainable operations management that takes a systems approach promotes the supportive sharing of knowledge, and allows the firm to have a strategic multidimensional perspective of the competitive as well as the operational environment, while simultaneously developing the operational ability to effectively allocate resources in the pursuit of strategic objectives (Hult, 2011; Llamas-Alonso, Jiménez-Zarco, Martinez-Ruiz, & Dawson, 2009).

Systems Theory. The cognitive problem solving and exchange of information that supports a systems approach as systems think is what scholars refer to as system dynamics (Forrester, 1994; Jackson, 2003; Richmond, 1994). When a firm's management cultivates a profound awareness of the underlying structural complexities supporting the system (themselves, their stakeholders, and the competitive environment), they are able to confidently construct inferences regarding the enterprise (Richmond, 1994). Consideration of the system in the context of its codified elements is said to be hard while the elements that confound codification are said to be soft (Forrester, 1994). Hard elements such as inventory, safety stock, or materials replenishment are systemized as well as governed by policies and procedures (Bendoly, 2014; Forrester, 1994). Soft elements such as motivations, personalities, and perceptions are in many cases intangible and resistant to being codified (Bendoly, 2014; Forrester, 1994). From an operations management perspective, hard elements would be viewed thru the lens of management science while soft elements would be viewed thru the lens of behavioral science (Adam, 1983). Bendoly (2014) pointed out that system dynamics understanding relates primarily to the harder elements of the systems, while systems thinking considers both the hard and soft system elements. Systems dynamics understanding encourages the system to evolve as

a learning enterprise by way of integrated operations management systems as well as experientially (Jaikumar & Bohn, 1992). Information or knowledge sharing is essential for the system to evolve successfully (Bendoly, 2014). In order to focus the attention of the enterprise on critical issues, system participants are empowered to collaboratively distribute their experience, observation, and recognition of critical issues (constraints; Bendoly, 2014; Bunderson, 2003). Systems thinking is holistic as it requires consideration of the system elements in the contexts of the evolving complexity of the system as a whole (Bendoly, 2014; Senge, 1990). System dynamics and systems thinking provide a framework for understanding the cognitive problem solving as well as the exchange of information that supports the systems approach (Bendoly, 2014).

This system approach finds its origins in systems theory (Zenko et al., 2013). Systems theory has been advanced by scholars, ranging from Aristotle, Marx, Fechner, to Von Bertalanffy (Von Bertalanffy, 1972). In the 1930s, Von Bertalanffy (1972), when defining systems theory, considered the whole and or wholeness while simultaneously considering the interconnectedness of the subset. Zenko et al. (2013) suggested the original authors of systems theory, Von Bertalanffy (1972), considered the theory the basis of interdisciplinary cooperation, a holistic approach to human productive interaction, and the wholeness that is the outcome of the productive interaction. Systems theory is considered a network or organization as a connected sum of its various parts and does not consider each part in isolation (Haque & Islan, 2013). Further, the theory seeks to understand internal as well as external problems, issues, or challenges from the perspective of the interrelatedness between the entities as they participate as a system (Haque & Islam, 2013).

For the purposes of this study, network and system are synonymous. Von Bertalanffy (1972) suggested that a system is a set of elements that are interrelated to themselves and its environment. System refers to loosely connected interrelated modular components that when engaged are mutually supporting (Xue et al., 2013). Additionally, a systems approach is a holistic view of these individual components as they are employed, arranged, engaged, or rearranged as needed to generate system results that are greater than any individual outcome (Shaked & Schechter, 2013; Xue et al., 2013). Xue et al. (2013) pointed out this modular systems format is not limited to tangible components, but also the systems approach is extremely applicable in organizational formats or structures that a firm chooses to employ.

Organizations are considered to be a summation of interrelated subsystems that are connected within their environment as defined by systems theory (Ritson, Johansen, & Osborne, 2012). For the organization as a whole, the engagement of a systems approach by operations management is appropriate in environments where expectations are high, accountability is a requirement, and uncertainty is prevalent (Shaked & Schechter, 2013). The elements within the system often interact in a nonlinear fashion thus allowing them to provide the organization with greater agility when faced with uncertainty (Xue et al., 2013; Zenko et al., 2013). Specific to this study, where uncertainty in a competitive environment is a central variable, systems theory is appropriate and applicable to the success of a modern organization because of the flexibility that systems approach provides (Anderson & Parker, 2013; Saynisch, 2010b). As Hult (2011) suggested, a systems approach is best suited for a dynamic and competitive environment for the purpose of generating a competitive advantage.

Business processes. Sackett, Maxwell, and Lowenthal (1997) argued the complexities for operations managers and manufacturing managers are becoming more complex. Of

particular concern is the rate of change within the competitive environments in which the firm operates (Sackett et al., 1997). They further argued the overall strategy of the firm was converging with the competitive strategy and the operations strategy at the business process level (Sackett et al., 1997). Additionally, Luftman, Lewis, and Oldach (1993) suggested the strategy of the firm is reflective of the business structure as well as the business processes, which are contingent on the interconnectedness of the firm's strategy and information sharing capabilities (Millet et al., 2009). Thus, supporting the assertion by Hult (2011) that a systems approach is best suited for a dynamic and competitive environment for the purpose of generating a competitive advantage. As a result, a firm's successful strategy execution is dependent on their ability to manage resource consumption within this interconnected system in a way that allows them to cope with external variability, internal constraints, and dependencies across the supply chain so as to successfully deliver value to their customers (Aldin & de Cesare, 2011; Wernerfelt, 1984).

From a strategic perspective, the resources of the firm are those elements of the firm that contribute to the strengths and weaknesses of the firm (Wernerfelt, 1984). Wernerfelt (1984) suggested that examples of the firms' resources consist of employees, brand, intellectual property, equipment, manufacturing networks, distribution networks, materials, contracts, and capital. These resources can be segregated at any given time into tangible and intangible assets that contribute to the competitiveness of the firm (Wernerfelt, 1984). Wernerfelt (1984) also pointed out the processes the firm employs to manage these resources are themselves a strategic resource (Bereznoi, 2014; Wernerfelt, 1984). As the resources of the firm are limited, business processes govern the application and consumption of those resources so as to maximize efficiency (Wernerfelt, 1984). Singh (2012), argued that business processes are designed to add

value for customers and will minimize the execution of unnecessary activities (Bereznoi, 2014; Davenport, 1993).

Scholars described business process as organizational routines that are repetitive and have recognizable patterns of interdependent action by cross functional participants (Levitt & March, 1988; Linderman, Schroeder, & Sanders, 2010). Organizational routines or business processes, establish organizational capabilities, nourish the organization with knowledge, and provide a structure for organizational memory (Feldman & Pentland, 2003; Linderman et al., 2010). In addition to the stability that business processes provide they also serve as a platform for change and competitive advantage (Davenport, 1993; Feldman & Pentland, 2003; Linderman et al., 2010; Porter, 1985b; Singh, 2012; Teece & Pisano, 1994). Organizations that wish to remain competitive of time must continuously realign their business practices with changing business requirements, to this end they will also regularly redesign their business processes (Ackoff, 1962; Aldin & de Cesare, 2011).

Changes in business process are driven by the information that is generated by the process itself and external strategic drivers that are generated within the competitive environment (Linderman et al., 2010; Singh, 2012). Due to the continuous changes in the competitive environment, firms must continually improve their business processes in order to adapt to these changes (Ackoff, 1962; Aldin & de Cesare, 2011; Havey, 2005). To this end, firms strive to be more agile and adaptive in their processes (Xu, Tan, Zhen, & Shen, 2008). For a change to be effective it must account for the relationship between strategy, structure, staff, skills, and systems (Aldin & de Cesare, 2011; Zairi, 1997; Zlatkin et al., 2005). As a result of effective change, organizations become adaptive and learning oriented (Linderman et al., 2010; Thietart & Xuereb, 1997).

Historically speaking, there were three waves of business process change (Aldin & de Cesare, 2011; Ould, 2005). In the first wave, business processes were not considered in written policies or procedure manuals (Aldin & de Cesare, 2011; Ould, 2005). The processes were considered to be just a way of doing things and no documentation was required (Aldin & de Cesare, 2011; Ould, 2005). In the second wave, the firm needed information for its metrics so they designed business processes to capture the needed information (Aldin & de Cesare, 2011; Ould, 2005). In the third wave, firms are focused on designing or evolving business processes that focus on efficiency first and information second (Aldin & de Cesare, 2011; Ould, 2005). This allows the firm to be more considerate of execution, modification, and monitoring of business processes as they seek to manage the cost-effective execution of the process in real-time (Aldin & de Cesare, 2011; Ould, 2005; Tan, Shen, Xu, Zhou, & Li, 2008). This third wave is driven by the firm's need to be flexible and adaptive in the face of changes in both its internal and external competitive environment (Aldin & de Cesare, 2011; Morgan, 2007; Ould, 2005).

The firms' operations and the competitive strategy both seek to differentiate the firm from its competitors (Porter, 1985b; Singh, 2012). Further, this differentiation is defined by the firms' business processes (Porter, 1985b; Singh, 2012). A business process or business processes are a managed set of internal activities in support of a customer (Aldin & de Cesare, 2011; Jacobson, Ericsson, & Jacobson, 1994). These structured activities are designed to produce a specific output that is compliant with the needs of the customer and the marketplace (Aldin & de Cesare, 2011; Davenport, 1993). Business process design focuses on how the work interaction are performed as opposed to the product or service that is being produced (Aldin & de Cesare, 2011; Davenport, 1993). The business process is specific in the order of execution (Aldin & de Cesare, 2011; Davenport, 1993). The processes have a clearly defined beginning,

middle, and end (Aldin & de Cesare, 2011; Davenport, 1993). Additionally, business processes define the specific inputs and outputs resulting in structured actions (Aldin & de Cesare, 2011; Davenport, 1993). Business processes are goal focused and reflect events that occur externally (outside the firm) or in other processes (inside the firm; Aldin & de Cesare, 2011; Hammer & Champy, 1994). These processes are collaborative and executed purposefully across functional boundaries as well as being driven by the needs of outside agents (Aldin & de Cesare, 2011; Ould, 1995).

From a systems perspective, these business processes govern the interaction of the firm with its customers, partners, stakeholders, and employees (Porter, 1985b; Singh, 2012). All activities within the business process are customer focused and any activities that are not customer focused are terminated (Singh, 2012; Zairi, 1997). A business process that is well designed will result in the firm being more effective in delivering value to the customer and more efficient in the consumption of the firm's resources (lower cost; Davenport, 1993). To this end business processes can be segregated into three categories, management, operational, and supporting (Davenport, 1993). Management processes are imperative to a business that wishes to compete in the global marketplace (Singh, 2012). Management processes are responsible for managing the organization in support of the stakeholders and the business strategy (Doh & Quigley, 2014; Singh, 2012). The management team implements these management process on two levels, first is corporate governance, and second is strategic management (Singh, 2012). Next, operational processes are important to the business that wishes to compete in the global marketplace (Singh, 2012). Operational processes provide the firm with the ability to create value for the customer and minimize their own costs (Bereznoi, 2014; Davenport, 1993; Singh, 2012). Operational processes that govern the firms purchasing, manufacturing, marketing, sales,

and service organizations are core processes which support the strategy as well as the goals of the firm (Singh, 2012; Spector, 2011). Additionally, these core operational processes provide the scaffolding that supports both the supply chain and the value chain (Haque & Islam, 2013). Lastly, there are the supporting processes responsible for governing the actions as well as the interactions of supporting organizations like accounting, human resources, and legal (Singh, 2012). These organizations support and add stability to the portions of the firm that are governed by operational processes (Singh, 2012; Spector, 2011).

Applying a systems approach to business processes insures stakeholder considerations are integrated into management processes, operational, processes, and supporting processes (Linderman et al., 2010; Singh, 2012). Although each of the three process types has its individual area of focus, they each fall under the general heading of business processes (Singh, 2012). Together the business processes set the foundation on which the organization will function and compete (Millet et al., 2009; Rillo, 2005). These processes are designed to produce outcomes that align with the strategic goals provided by the management team thus resulting in the holistic execution of the firm's business strategy (Bento, Bento, & White, 2013; Kaplan & Norton, 1995; Singh, 2012).

To this point, the literature has provided a perspective on competitive strategy and operations. The initial focus was on strategy and how it is integrated into the operations of the firm. The literature demonstrates a firm's ability to be competitive is dependent on the linkages between the customer, the strategy of the firm, and the operations of the firm. The strategy and direction of the firm are derived from inputs of both internal and external stakeholders (Fernando & Lawrence, 2014). The strategy is internalized into strategic goals which guide the business processes as they provide the controls that deliver the organizational strategy (Haudan, 2007). It

is this integration of the strategy into a system of goals and business processes across multiple entities that allow the firm to maximize the use of its resources and minimize its costs (Kohlbacher, 2013; Poblador, 2014). This systems perspective sets the foundation for a competitive advantage and the success of the firm (Poblador, 2014). Additionally, it is the control offered by business processes that provide the firm with a stable platform for its strategy (Singh, 2012).

Value Chain, Supply Chain, and Decoupling Point

When a customer impacting, random event occurs in the customer's competitive environment that negatively impacts the delivery requirement for a customer's sales order, the customer is motivated to request a non-conforming delivery expedite for its sales order date requirement (Andreev & Panayotova, 2013; Lui, 2011). Many times, the customer's new request date is inside the published standard lead-time. These types of requests have the potential to create a dilemma for the supplier. The supplier could rigidly adhere to the published standard lead-time or temporarily relocate the decoupling point in an effort to generate the flexibility needed to support the customer expedite request (Christou & Ponis, 2009). Should the supplier decide to temporarily relocate the decoupling point there is a potential that its value chain and supply chain may be negatively impacted (Banerjee et al., 2012). It is thru this lens that consideration is given to the value chain, the supply chain, and the decoupling point.

First, a look at the value chain and its focus on the integration of the customer into the business processes and supply chain of the firm (Kapić, 2014). This value driven view of the organizations and its outputs present a customer-driven perspective that is both strategic as well as operational. Secondly, the perspective narrows the organizational focus to consider the supply chain as a result of customer perceived value as well as the physical application of the systems

approach (Claudiu et al., 2011). Lastly, consideration is given to the challenges within the supply chain to balance the needs of the firm to control costs and to add customer value. The point of collision where the firm's interest in controlling costs meets the firm's commitment to add value for the customer is known as the push-pull boundary or the decoupling point (Andreev & Panayotova, 2013; Kim et al., 2012; Ming-Hon & Hsin, 2007).

Value Chain. The strategy mapped out by a firm is intended to capitalize on what it perceives as a competitive advantage and thus generate a profit (Lv, Plechero, & Basant, 2013; Rezaie, Ostadi, & Torabi, 2008). A firm creates a competitive advantage by becoming a cost leadership, differentiation, and product niche focus (Singh, 2012). Lv et al. (2013) pointed out that cost leadership and differentiation are commonly used as generic yet sustainable competitive strategies by many firms. In many cases a blended or hybrid strategy combines both cost leadership and differentiation as a way of providing customer value and creating a competitive advantage (Lv et al., 2013).

In turn, the value chain is an evaluation of the firm's resources and capabilities through the lens of what the customer perceives, then balanced against what the firm views as profitable (Claudiu et al., 2011). With this understanding of value and the management of resources the supply chain represents a large portion of what is considered to be the value chain (Banerjee et al., 2012). The value chain strives to reduce all firm activities to those that add customer or stakeholder value to the organization (Rayport & Sviokla, 1996; Singh, 2012). The value chain model focuses the firm on those value-added activities that connect the supply side of the firm with the demand side or the firm (Porter, 2008; Rayport & Sviokla, 1996; Singh, 2012). Firms that commit to a value chain model seek to meet their customer (and stake holders) where they

are and to execute more efficiently than the completion (Krasnikov, Jayachandran, & Kumar, 2009).

The value chain model was created as part of a generalized theory of strategy (Porter, 1985a, 1985b, 2008, 2014; Porter & Kramer, 2014). The value chain represents the collective activities performed by the firm in its creation, delivery, and support of the firm's products and services (Porter, 2008; Singh, 2012). All of the activities of the firm can be categorized as primary activities or supportive activities (Porter, 2008; Singh, 2012). The primary activities of the firm are engaged in the physical creation and delivery of its products (Porter, 2008; Singh, 2012). These activities include logistics, operations, marketing, sales, and services (Porter, 2008; Singh, 2012). The supportive activities as per their name support the primary activities of the firm (Porter, 2008). The supportive activities of the firm include the infrastructure of the firm, the firm's human resources, technology development, and the firm's procumbent (Porter, 2008; Singh, 2012). Further, within the two activity categories (primary and supportive) there are three types of activities, direct activities, indirect activities, and quality assurance (Porter, 2008). The direct activities focus on creating value (sales operations, assembly, parts, and advertising) for the buyers that represent the demand requirements for the firm's customers (Davenport, 1993; Porter, 2008; Singh, 2012). The indirect activities such as maintenance, scheduling, facility operations, and sales force administrations all support direct activities (Joglekar & Lévesque, 2013; Porter, 2008). Quality assurance activities such as monitoring, testing, checking, inspecting and adjusting ensure the quality of all of the firm's activities (Porter, 2008).

The Value Chain Model is more than a series of independent activities, the value chain consists of interdependent activities that link with one another into a system (Beaudreau, 2011; Porter, 2008). These linkages provide a competitive advantage to the firm through optimization

and coordination (Beaudreau, 2011; Porter, 2008; Singh, 2012). On-time delivery or expediting of a delivery is representative of the coordination between the linkages (Porter, 2008; Roth & Menor, 2003). The coordination of linkages also assists the firm in the creation of differentiation of products, reduction in cost, and customer support (Kouvelis, Chambers, & Wang, 2006; Porter, 2008). In addition to the internal linkages of the firm's value chain the value chain also has external vertical linkages (Beaudreau, 2011; Porter, 2008). The vertical linkages connect the value chain of the firm to the value chains of its suppliers and channels (Beaudreau, 2011; Porter, 2008). Within the firm's value chain, value is derived from how the product or service being supplied affects the value chains of the vertical linkages on both the supply and the demand side of the supply chain equation (Beaudreau, 2011; Porter, 2008).

Supply Chain. The supply chain represents a great portion of the value chain for any firm (Banerjee et al., 2012). Stated simply, the prime directive for the supply chain is to connect supply with demand (Cohen & Kunreuther, 2007). The supply chain is a system that connects the vendors, partners, and customers to the firm in order to generate more value at a lower cost for the system participants than each of the participants could achieve individually (Marchi et al., 2014). Supply interactions seek to control costs while demand interactions seek to increase customer satisfaction (Haque & Islam, 2013). The supply chain, as a system, seeks to harmonize the activities of all of the system participants (Cohen & Kunreuther, 2007; Haque & Islam, 2013). The management of the supply chain as a collaborative system integrates upstream supply participants with downstream demand participants (Cohen & Kunreuther, 2007; Kumar & Nambirajan, 2013). It is argued that firms that participate in a well-managed supply chain gain a sustainable competitive advantage by leveraging resources that reside outside the firm itself (Cadden et al., 2010; Casson, 1997; Casson & Wadeson, 2013; Dyer & Singh, 1998).

The success of the supply chain system is determined by the abilities of the participants to collaborate, integrate logistics, and account for organizational cultures (Haque & Islam, 2013). Cultural continuity between the organizations participating in the supply chain is a foundational element of the success supply chain and the firm (Simberova, 2009). Cultural continuity will promote trust and openness across the system (Simberova, 2009). Cadden et al. (2010) pointed out that one of the greatest challenges for a supply chain is cultural incompatibility between the participating organizations that make up the supply chain system. Next collaboration is dependent on the ability of the supply chain participants to freely share information across the supply chain system (Datta & Christopher, 2011). This openness allows the participants to quickly identify challenges and make the appropriate adjustments at minimal cost (Chang & Yeh, 2012; Datta & Christopher, 2011). Information technology enables the supply chain participants to employ a systems approach to the supply chain and its management (Anderson & Parker, 2013; Datta & Christopher, 2011; Sarker & Sarker, 2009). The integration of logistics considers the proliferation of IT infrastructure into information logistics design and occurs in two dimensions (Haque & Islam, 2013). First, the incorporation of an IT system or ERP system that crosses the organizational boundaries of the supply chain is implemented (Haque & Islam, 2013; Turner & Chung, 2005). This insures each supply chain participant is able to publish (upload) data as well as query or (download) data from the unified ERP system so they can quickly facilitate adjustments to their portion of the supply chain (Radu, Horaţiu, Bogdan, & Mihai, 2013; Tan Shiang, Idrus, & Yusof, 2011). Secondly, systems training is provided to key groups within each supply chain participant organization (Haque & Islam, 2013). The delivery of training and training updates insures all supply chain participants are maximizing the use of information within the ERP system (Luminita & Ana-Maria, 2013; Turner & Chung, 2005).

Historical supply chains have been susceptible to both demand uncertainty and supply uncertainty (Chiang & Feng, 2007). As a result of the IT proliferation across the supply chain system, many of the tasks have been standardized and automated to reflect the inputs of the multiple supply chain participants (Christou & Ponis, 2009; Turner & Chung, 2005). When a demand order is entered into the ERP system, that information is then compared with existing supply availability and a commitment date is automatically provided (Andreev & Panayotova, 2013; Christou & Ponis, 2009; Turner & Chung, 2005). Simultaneously, the demand is transmitted to the supply participants for fulfillment or replenishment (Andreev & Panayotova, 2013; Christou & Ponis, 2009).

Supply chain interactions are managed by business process that insures efficiency, cost reduction, reduced cycle time, increased predictability, and promotes better decision making (Cohen & Kunreuther, 2007; Kouvelis et al., 2006). In normal operations, these standard processes allow the supply chain system elements the ability to maintain stability and minimize disruptions to the supply chain (Kouvelis et al., 2006; Vlckova & Patak, 2011). Datta and Christopher (2011) pointed out that no supply chain is ever perfectly optimized and uncertainty does exist.

Datta and Christopher (2011) suggested that supply chain participants are to manage uncertainty with their agility, the supply chain information structure, integration, and their flexibility. Each of these responses to uncertainty in the supply chain is founded in the ability of the participants to share information (Chiang & Feng, 2007). This information sharing has allowed the supply chain to hedge against both supply and demand uncertainty (Chiang & Feng, 2007; Datta & Christopher, 2011). Further, Chen, Drezner, Ryan, and Simchi-Levi (2000) showed that information sharing between supply chain participants is effective at minimizing the

impact of the bullwhip effect (Chen et al., 2013; Chiang & Feng, 2007). The sharing of information between supply chain partners improves forecasting accuracy (Chiang & Feng, 2007; Datta & Christopher, 2011; Zhao, 2002).

Decoupling Point. As part of the value proposition, supply chain networks are charged with balancing the impact of supply costs to the firm and customer-driven time constraints in a mutually efficient manner (Haque & Islam, 2013). Simultaneously supply chain participants are compelled to meet the demand for mass customization (Andreev & Panayotova, 2013; Pine, 1992). To this end many firms adopt a hybrid push/pull supply chain model (Kaminsky & Kaya, 2009). This hybrid model seeks equilibrium between the supply push of raw materials or work in process (WIP) from upstream supply partners with the demand pull for finished goods from the downstream customers (Teo et al., 2012). The hybrid or push/pull supply chain model focuses on managing the point where the supply push meets the demand pull. This meeting point is the plain of stability or the decoupling point, which is created by the boundary tension between supply and demand Teo et al., 2012). The concept of this boundary was first introduced by Sharman (1984; Banerjee et al., 2012). Scholars' referred to the boundary as the customization point, point of product differentiation, order penetration point, the push-pull boundary, and the decoupling point (Andreev & Panayotova, 2013; Feitzinger & Lee, 1997; Gupta & Benjaafar, 2004; Hallgren & Olhager, 2006; Olhager, 1994, 2003; Pine, 1992; Swaminathan & Tayur, 1999).

The portion of the decoupling point location that is associated with the demand pull is a key component in the management of the supply chain and that demand planning within the ERP system is essential to a successful supply chain (Chen et al., 2007). As such the decoupling point is the singularity that most reflects the value of information sharing between the supply chain

participants (Andreev & Panayotova, 2013; Chiang & Feng, 2007; Datta & Christopher, 2011). There are those who now argue that the future of the supply chain is a Pull-Pull-Pull model where supply chain management (SCM) shifts to focus on demand chain (DCM; Ming-Hon & Hsin, 2007). The Pull-Pull-Pull model purports that efficiency becomes a reflection of the depth of demand penetration into the supply chain (Andreev & Panayotova, 2013; Kim et al., 2012; Ming-Hon & Hsin, 2007). This suggests the most efficient supply chain is one that pushes raw materials based on demand pull from the customer, a make to order (MTO) model (Ming-Hon & Hsin, 2007). At the same time, there is a push in the supply chain management community to use multiple decoupling points instead of one single point for each product (Banerjee et al., 2012; Swaminathan & Tayur, 1998). Wang et al. (2010) argued the strategy of a single decoupling point was not sufficient to allow for efficient supply chain management and that a multi-point strategy would be more inclusive (Banerjee et al., 2012; Wang et al., 2010). The decoupling point has two planes of existence, one in the physical supply chain and another in the informational system of the supply chain (Banerjee et al., 2012; Mason-Jones & Towill, 1999).

Accurate demand planning is complicated yet at the same time is key to positioning the decoupling point within the supply chain (Vlckova & Patak, 2011). No matter the supply chain model, the challenge for supply chain managers is to understand and locate the point of convergence for the supply push and the demand pull (Bhatnagar, Chandra, & Goyal, 1993; Kim et al., 2012; Ming-Hon & Hsin, 2007). This location would indicate where the demand chain connects with supply chain (Kim et al., 2012; Ming-Hon & Hsin, 2007). The location of this convergence is referred to as the push-pull boundary (PB) or for the purposes of this study the decoupling point (Andreev & Panayotova, 2013; Kim et al., 2012; Ming-Hon & Hsin, 2007). This location represents the extent of customer demand penetration into the supply chain

(Andreev & Panayotova, 2013; Kim et al., 2012; Ming-Hon & Hsin, 2007; Olhager, 1994, 2003). Additionally, this location is the point of equilibrium, the ideal balance of cost reduction while still maintaining the flexibility to meet the needs of the customer (Giesberts & Tang, 1992; Mason-Jones & Towill, 1999; Wang et al., 2010).

The literature in this portion of the review has focused on three key areas of importance to this study. The first area considered the value chain and the integration of the customer into the business processes as well as the supply chain (Kapić, 2014). A value driven view provides an alignment of the organization and makes all actions within the firm strategic in their contribution to the competitive advantage of the firm. The second consideration was the supply chain as a result of customer perceived value as well as the physical manifestation of the systems approach (Claudiu et al., 2011). Lastly was a study of the decoupling point and the importance of its location within the supply chain (Andreev & Panayotova, 2013; Kim et al., 2012; Ming-Hon & Hsin, 2007).

Application of Project Management

A focal point for this study has been the turbulence that is caused by the movement of the decoupling point within the supply chain (Banerjee et al., 2012). The consideration of turbulence in the supply chain versus the stability of the decoupling point is especially important when the firm is faced with a customer-driven random event (Christou & Ponis, 2009). The systems approach to the supply chain does control and stabilize the randomness under normal circumstances (Casson & Wadeson, 2013). However, the additional pressure introduced into the system by the random event causes a change in the location of the plain of stability, the decoupling point, thus temporarily removing the harmonizing force of the systems approach of the SCM (Dansong & Wenxue, 2005; Pomeau & Villermaux, 2006). Following the suggestion

of Andreev and Panayotova (2013), the engagement of a project manager and the application of project management principals will help to minimize the uncertainty that the temporary relocation of the decoupling point will cause. The value of the project manager will be discussed further in this portion of the review.

This portion of the review considers project management and project managers from two perspectives. The first area of perspective considers project management in a traditional sense so as to provide a foundation that supports the project management profession as a core competency as well as a strategic contributor to the firm (Patanakul & Shenhar, 2012). The second considers project management in a non-traditional or evolutionary perspective (Saynisch, 2010b). The second perspective understands that businesses participating in the global market place are not static, additionally the uncertainty that firms' wish to mitigate are not static, as such businesses need project managers that are not static (Ritson et al., 2012).

Lastly, this portion of the study is grounded in two theories: agency theory and complex adaptive systems (CAS) theory. Like systems theory, these two theories are applicable as they support multiple areas of this study. However, this is the portion of the literature review that seems best suited and the most logical location as they provide a theoretical capstone for the study.

Project Management. Project management has its origins in the US aerospace projects of the 1950s (Lepadatu, 2010; Leybourne, 2007; Saynisch, 2010b). Then, in the late 1970s, the Project Management Institute (PMI) began the process of formalizing project management into a profession (Leybourne, 2007; Morris, 2013). From that time, project management has supported projects focused on organizational strategy, value management, stakeholder management, systems engineering, change management, supply chain, resource management, and quality

management (Leybourne, 2007; Morris, 2013; PMBOK, 2013). The key to the engagement of project management is the project is a temporary pursuit of a specific product or service (Kaleshovska, 2014; PMBOK, 2013). In order to deliver the project, the project manager is tasked to employ management techniques to successfully deliver a specific product or service (Morris, 2013).

Agency Theory. The body of knowledge on agency theory is extensive (Bosse & Phillips, 2016). That said, one of the seminal works on the subject is authored by Jensen and Meckling (1976). In an effort to study agency cost they recognized the inadequacy of the theory of the firm at that time (Jensen & Meckling, 1976). They further described these firm oriented theories as a special variant of the existing theory of agency relationships (Jensen & Meckling, 1976). As part of their study they pointed out that agency was a reflection of cooperation between an agent and a principal (Jensen & Meckling, 1976). Additionally, they were one of the first to recognize there exist situations where the decisions made by the agent will deviate from the decision options that would have maximized the principals' welfare (Bosse & Phillips, 2016; Jensen & Meckling, 1976).

There are several additional works that provide an overview of agency theory and further support the work of Jensen and Meckling (Bosse & Phillips, 2016; Bradley & Schipani, 1999; Dalton, Hitt, Certo, & Dalton, 2007; Walsh & Seward, 1990). Agency theory implies there is a relationship between an agent and a principal (Eisenhardt, 1989; Mansouri & Rowney, 2014). More specifically, within the relationship there is an agent that has agreed to provide the principal in the agreement a particular output for a stated compensation (Eisenhardt, 1989; Gibbons, 2005). The agreement itself is a contract that is referred to as either an outcome-based or behavioral based contract (Eisenhardt, 1989; Mahaney & Lederer, 2011). In the relationship,

the principal holds the agent accountable by way of the incentives and penalties that are specified in the contract or implied by the contract (Eisenhardt, 1989; Mansouri & Rowney, 2014); thus, monitoring and accountability are key tools for the principal in motivating the agent to generate the principals' desired outcome (Dalton et al., 2007; Mansouri & Rowney, 2014). Agency theory considers both the agent and the principal to be self-interested and as such the purpose of the accountability is to motivate the agent to prioritize the interests of the principal above their own self-interests (Jensen, 1998; Mansouri & Rowney, 2014).

Most of the debate and literature on agency theory is focused on what is known as the agency problem (Bosse & Phillips, 2016; Dalton et al., 2007; Jensen, 1998; Mansouri & Rowney, 2014). The agency problem suggests that those agents who hold private information, that is in their self-interest to keep private, and their incentive for self-interests exceeded interest of the principal, the agent will make their own self-interests the priority (Huang & Chang, 2010; Van Puyvelde, Caers, Du Bois, & Jegers, 2013). As an example, under agency theory it would appear that having an agent responsible to two competing principals, like the project manager with commitments to the firm and the customer, there would be a conflict of interest or what is known as the agency problem. This would be true if the agency problem within this theory was not addressed (Davis, Schoorman, & Donaldson, 1997a; Van Puyvelde et al., 2013). If the agency problem is taken at face value, the project manager is at the apex of two principals with competing self-interests and one of the principals holds greater accountability over the project manager than the other principal.

The problem is this view of agency theory is one sided as it only sees the agent as superficial, self-involved, self-serving, and self-interested in their own gains (Jensen, 1998; Mansouri & Rowney, 2014). Another element of agency theory is stewardship (Davis et al.,

1997a; Davis, Schoorman, & Donaldson, 1997b; Mansouri & Rowney, 2014). This element considers personal ethics as a complementary extension of the accountability systems implemented on behalf of the principals (Davis et al., 1997a, 1997b; Donaldson & Davis, 1991; Mansouri & Rowney, 2014). In this case, the personal ethics includes, but is not limited to, factors such as individual responsibility, professionalism, and personal accountability (Bosse & Phillips, 2016; Mansouri & Rowney, 2014). When considering stewardship, an agent values the relationship, the responsibility, a shared trust, the satisfaction of success, and recognition equally or more than any intrinsic motivator (Bosse & Phillips, 2016; Mansouri & Rowney, 2014). Within agency theory, the stewardship explains how the project manager, while acting as a change agent, serves two opposing principals (Donaldson & Davis, 1991; Mansouri & Rowney, 2014; Van Puyvelde et al., 2013).

Stewardship is considered by some to be an element of agency theory that provides balance to the agency problem (Davis et al., 1997a, 1997b; Donaldson & Davis, 1991; Mansouri & Rowney, 2014; Van Puyvelde et al., 2013). On the point of stewardship, it is also important to acknowledge there are scholars who believe that stewardship is more than an element of agency theory, they consider stewardship to be its own theory (De Falco & Renzi, 2007; Mansouri & Rowney, 2014; Van Puyvelde et al., 2013).

At this time, there is no common agreement on whether stewardship should or should not be a standalone theory, as such this study presents stewardship as an integrated element of agency theory (Mansouri & Rowney, 2014; Van Puyvelde et al., 2013). As such, agency theory when fortified by stewardship as an integrated element, provides theoretical support for the participation of the project manager in the temporary relocation of the decoupling point (Mansouri & Rowney, 2014; Van Puyvelde et al., 2013).

Traditional PM. In the early days of project management, the term project management competencies was used as a cover for all actions, interactions, and knowledge that may affect a project manager's performance (Bassellier, Reich, & Benbasat, 2001). Until recently there was little project management research that focused on the competencies of a project manager (Leybourne, 2007; Skulmoski & Hartman, 2010). The bulk of project management research focused on the technical skills of project management, program management, and project portfolio management (Leybourne, 2007; Skulmoski & Hartman, 2010). More recently, the research has shifted from a technical perspective to provide more consideration of behavioral approaches (Cheng, Dainty, & Moore, 2005; Skulmoski & Hartman, 2010).

From a traditional perspective, project management emphasized budget, project scope, project teams and project meetings (Patanakul & Shenhar, 2012; Shenhar & Dvir, 2007). With regards to a specific project, a project manager is focused on forward planning, delivery approaches, and action plans that support objective oriented systems (Murugesan, 2012; Saynisch, 2010b). Traditionally the hard skills that a project manager employed in these projects were very methodical, mechanical, hierarchical, controlled as top down, and linear in approach (Lepadatu, 2010; Leybourne, 2007; Saynisch, 2010a). Project managers manage by initiating, planning, executing, monitoring and controlling, and closing a given project (Hahn, Bredillett, Gyeung-Min, & Taloc, 2012; Lepadatu, 2010; Leybourne, 2007; Murugesan, 2012; Patanakul & Shenhar, 2012; PMBOK, 2013). From a knowledge perspective a project manager understands integration management, scope management, time management, cost management, communications management, risk management, and procurement management (Hahn et al., 2012; Lepadatu, 2010; Leybourne, 2007; Murugesan, 2012; Patanakul & Shenhar, 2012; PMBOK, 2013). Presently there is an argument in the project management community for the

profession to evolve beyond the traditional role of a project manager (Saynisch, 2010a; Winter, Smith, Morris, & Cicmil, 2006). This project management evolution is driven by the need for business to remain competitive thus reflecting the demand for firms to manage increasing complexity and continuous change within their competitive environments (Saynisch, 2010a, 2010b).

CAS Theory. Complex Adaptive Systems theory (CAS) concerns itself with gathering information so as to understand the relationship between scenarios that are controlled and those that are out of control (Choi, Dooley, & Rungtusanatham, 2001; Marchi et al., 2014). CAS finds its foundations in theories that are non-linear, chaos theory, cybernetics, social evolution, neurology, artificial life, sociobiology, systems theory, and evolution (Choi et al., 2001; Dansong & Wenxue, 2005; Saynisch, 2010a). A complex adaptive system is a conglomeration of the network components, parts, participants, or agents that engage in multiple interactions (Holland, 2006; Marchi et al., 2014). The components or participants could be an individual, a group, organization, a society, or even an environment (Marchi et al., 2014). CAS consists of autonomous agents or components that interact with frequency and that poses the ability to learn as well as self-organize (Marchi et al., 2014; Teske, 2010).

Holland (1995) presented the seven characteristics of CAS, non-linearity, flows, tag, internal models, aggregation, building blocks, and diversity (Dansong & Wenxue, 2005). Nonlinear means the issue, information, or interaction does not move in a linear fashion (Dansong & Wenxue, 2005; Holland, 1995). Flow is related to the energy (e.g., information) exchange between an entity and its environment (Dansong & Wenxue, 2005; Holland, 1995). The tag refers to things like brand, enterprise culture, model, and even trademarks.

The interior model considers accumulated knowledge and experiences with business practices (Dansong & Wenxue, 2005; Holland, 1995). Aggregation is the ability of a system to spontaneously reorganize as an adaptation to stimulus (Dansong & Wenxue, 2005; Holland, 1995). Building blocks are those components or resources that are available to address a problem at any given time (Dansong & Wenxue, 2005; Holland, 1995). Diversity is concerned with the ability to adapt or adjust based on changing environmental and uncertainty (Dansong & Wenxue, 2005; Holland, 1995).

When these characteristics of CAS are evaluated against a supply chain or the occurrence of an unforeseen event organizations are able to develop agility that allows them to become more competitive (Dansong & Wenxue, 2005; Holland, 1995). Additionally, because CAS is not bound by linearity it explains the non-linear interactions of systems as they evolve as well as adapted to uncertainty with agility (Lehtiranta, 2011). The challenge for those organizations or individuals that interact and compete in complex environments is to accept change, as well as be ready for paradigm shifts (Choi et al., 2001; Dagnino, Levanti, & Destri, 2008; Dansong & Wenxue, 2005; Holland, 1995, 2006; Marchi et al., 2014; Pathak, Day, Nair, Sawaya, & Kristal, 2007; Rammel, Stagl, & Wilfing, 2007; Saynisch, 2010b).

PM Under Complexity. As a result of the competitive environments that surround businesses becoming more complex and systems oriented with integrated supply chains and value chains, the profession of project management is evolving (Ahsan, Ho, & Khan, 2013; Kerzner, 2003; Poblador, 2014). Project managers have recognized the need to expand their project approach in order to accommodate the demand for a broad understanding of the supply chain system, the need for greater coordination, and the increased focus on interpersonal skills in the project environment (Ahsan et al., 2013; Kerzner, 2003; Poblador, 2014). Historically,

project management methodology has engaged projects within the supply and value chain systems with a linear approach or the project is shackled by linear thinking (Ahsan et al., 2013; Dansong & Wenxue, 2005). However modern supply and value chains are not linear, they have evolved into complex adaptive systems (Dansong & Wenxue, 2005; Jaehne, Li, Riedel, & Mueller, 2009). In response to the ever present, threat of uncertainty and the complexities, project managers have taken a nonlinear approach (Marchi et al., 2014; Saynisch, 2010b). The project managers in these complex environments find themselves leading a project to address these uncertain challenges (Marchi et al., 2014; Saynisch, 2010a).

Historically, strategy was the realm business executives and project managers considered operational and not as a creator of competitive advantage (Mintzberg et al., 1998; Patanakul & Shenhar, 2012; Porter, 1985a, 1985b, 2008). However strategic project management is gaining momentum and is also delivering a competitive advantage (Patanakul & Shenhar, 2012; Shenhar, 2004; Shenhar & Dvir, 2007). This strategic approach to project management has encouraged project managers to integrate strategic guidance into the project process, thus contributing to the strategic objectives of the firm (Artto, Kujala, Dietrich, & Martinsuo, 2008; Patanakul & Shenhar, 2012; Shenhar, 2004).

Project management is described as a grouping of knowledge, attitudes, behaviors, and aptitude to do what is needed to complete a project (Boyatzis, 1982; Ortiz-Marcos, Benita, Aldeanueva, & Colsa, 2013). In order to successfully deliver a project in an environment of increased complexity and uncertainty it is paramount that project managers broaden their knowledge, hone their skills, and improve their interpersonal interactions so as to allow them to influence stakeholders (Ortiz-Marcos et al., 2013). These softer competencies have allowed the project manager to integrate personal relationships into project management so as to build trust

(Kaminsky, 2012; Ortiz-Marcos et al., 2013). The project managers' ability to apply their emotional intelligence (soft skills) to a project situation has been found by several studies to be more important than the application of their hard skills (Clarke, 2010; El-Sabaa, 2001; Galvin, Gibbs, Sullivan, & Williams, 2014). In a study by Winter et al. (2006) that was concerned with the future of project management, they suggested the ability of the project manager to be reflective and have social as well as emotional intelligence was imperative to success (Clarke, 2010; Winter et al., 2006). A study of the skills and career paths of effective project managers by El-Sabaa (2001) discovered that a project manager's human skills (the ability to interact with others) was by far the most important skill that an effective project manager possessed (Clarke, 2010; El-Sabaa, 2001). In a study of emotional intelligence, transformational leadership, and project manager competencies Clarke (2010) demonstrated the importance of soft skills in project management because project managers are so engaged working across functions and organizational boundaries where they encounter many different cultures (Böhm, 2013; Clarke, 2010). The growing importance of theses softer skills in project management is reflective of the project managers' evolution from an administrator into a leader (Ahsan et al., 2013; Anantatmula, 2010; Cicmil, Williams, Thomas, & Hodgson, 2006; El-Sabaa, 2001; Galvin et al., 2014; Hodgson, 2005; Hölzle, 2010).

Project Management Applied. Project management functions in both the traditional and complexity perspective (Morris, 2013; Saynisch, 2010a). Saynisch (2010b) suggested that project managers continue to integrate both traditional and complex skills into their skill set (Cheng et al., 2005; El-Sabaa, 2001; Saynisch, 2010a). As a result, the project management community integrated their technical skills (or hard skills), behavioral skills (or soft skills), and their ability to take a systems view of a project (Ahsan et al., 2013; Galvin et al., 2014; Ortiz-

Marcos et al., 2013; Patanakul & Shenhar, 2012). It is through the ability of the project manager to implement a holistic approach, as they function across organizational boundaries that allowed them to support the strategy of the firm and add value (Hahn et al., 2012; Patanakul & Shenhar, 2012; Shenhar, 2004; Shenhar & Dvir, 2007).

Literature Review Summation

The literature review began with the strategic motivation for a firm to seek a competitive advantage. Additionally, consideration was given to how business processes set the foundation for competitive strategy. The review also provided an insight into the stability produced by the firm's systems approach to operations and business processes (Shaked & Schechter, 2013; Xue et al., 2013).

Further, the literature review continued with the system perspective as it considered the value chain and the supply chain as generators of competitive advantage opportunities (Claudiu et al., 2011). Simultaneously, the connectedness of the supply chain as a system means random events easily destabilize the system (Banerjee et al., 2012). This leads the literature review to consider the decoupling point and its role in the supply chain as well as the risk caused by a temporary position displacement.

Also, presented in the literature review was project management from the differing perspectives of its history and its future. The theoretical foundation for the project management literature was the agency theory and the CAS theory. With regards to the project management body of knowledge, much of the literature focused on the technical aspects of project management (Kaminsky, 2012; Shenhar & Dvir, 2007). Academicians are gradually shifting their investigation to observe the soft skills involved in project management and the strategic

importance of project management (Ortiz-Marcos et al., 2013; Patanakul & Shenhar, 2012; Shenhar, 2004).

Finally, there is a gap in the literature supporting the engagement of a project manager in the temporary relocation of the decoupling point. There is no literature that directly linked the interactions of the project manager and the decoupling point. There was a great amount of literature regarding the decoupling point and a moderate amount of literature focusing on project management. This literature review did accentuate the risks and challenges of moving the decoupling point (Banerjee et al., 2012). The literature review also provided a logical progression that suggests the applicability of engaging a project manager to manage the temporary relocation of the decoupling point, while minimizing turbulence that could impact the supply chain (Andreev & Panayotova, 2013).

Transition and Summary

This phenomenological investigation sought to address the problem of turbulence in the supply chain that results from the temporary relocation of the decoupling point (Kim et al., 2012). The relocation of the decoupling point is a strategic response by the firm to a random customer-driven event (Kim et al., 2012). The turbulence that results from the movement of the decoupling point is a manifestation of the competing requirements of the supply chain management model and firms the need to support a customer project when an unplanned event introduces uncertainty into the supply chain (Sarangi & Srivatsan, 2009). Within the supply chain, the decoupling point represents a plane of cohesion where the predictability of the supply chain converges with the unsteadiness of customer demand (Teo et al., 2012). As a result of the relocation, the plane of stability becomes unbalanced and uncertainty enters the supply chain (Teo et al., 2012).

To understand the potential value that a project manager could provide, a literature review was conducted to determine the types of research currently available and to understand the challenges that were central to minimizing the turbulence that is caused when the decoupling point is temporarily relocated due to a random customer event. By considering the body of knowledge that has been established by previous studies as well as the theoretical support for such an engagement, the review demonstrates there is a gap in the literature regarding the value of the introducing a project manager and the project management skills to support a non-standard customer requirements like a temporary relocation of the decoupling point (Abramovici & Bancel-Charensol, 2004). As a result of this literary gap, the questions posed by this study are still unanswered and open to investigation.

This investigation focuses on three questions (one primary and two secondary). The primary question: Does the introduction of a project manager add strategic value when customer-driven random events occur that require additional flexibility in the supply chain? The two sub-questions: First, does a project manager have the ability to add strategic value by extending the voice of the customer (VOC) deeper into the organization while effectively integrating the needs of both the customer and the supply chain in support of the strategic objectives of the firm? Secondly, will the engagement of a project manager in the management of the temporary relocation of the decoupling point minimize the potential for the bullwhip effect in the supply chain while meeting the customers' random and unique project need? The next section presents the methodology and procedures related to the field study thus providing the framework for the researcher to answer these questions.

Section 2: The Project

The temporary relocation of the decoupling point is a strategic response by the firm to a random customer-driven event (Kim et al., 2012). The unintended consequence of this temporary relocation is the creation of turbulence in the supply chain (Kim et al., 2012). It is the removal or minimization of the turbulence when the decoupling point is temporarily relocated that this phenomenological investigation seeks to address. To this end the research focuses on three questions (one primary and two secondary) that are seminal in developing a response to the challenge caused by the turbulence. The primary question: Does the introduction of a project manager add strategic value when customer-driven random events occur that require additional flexibility in the supply chain? The two sub-questions: First, does a project manager have the ability to add strategic value by extending the voice of the customer (VOC) deeper into the organization while effectively integrating the needs of both the customer and the supply chain in support of the strategic objectives of the firm? Secondly, will the engagement of a project manager in the management of the temporary relocation of the decoupling point minimize the potential for the bullwhip effect in the supply chain while meeting the customers' random and unique project need?

Section 1 of the study focused on definition and passive research, Section 2 provides a structured map, a methodology, which will guide the active research portion of the investigation. Methodology links the paradigm, how the problem is structurally perceived and addressed, governed questions (research questions) to the appropriate method and the desired outcome (O'Donoghue, 2007). The method, a linked component of the methodology and is appropriate to the pyridine, is an assemblage of process, techniques, and considerations that facilitate the gathering and analysis of artifacts that are related to the research question (O'Donoghue, 2007).

The appropriate methodology for this research study is the qualitative approach, with a qualitative method, hermeneutic phenomenological design, and interviews as the research instrument (Creswell, 2013, 2014; Hatch, 2002; O'Donoghue, 2007). This methodological schema seeks to understand the essence of the lived experience of those participants that encountered the phenomenon described in the purpose statement of the research study (Creswell, 2013). The following sections are a presentation of the elemental components which constitute the appropriate methodology for this study.

Purpose Statement

The purpose of this qualitative hermeneutical phenomenological study was to investigate, understand, and describe the value of engaging a project manager to support a customer-driven project that creates a random supply chain demand event (Andreev & Panayotova, 2013). Specifically, such an event would require the temporary re-positioning of the decoupling point between the supply push and demand pull within the supply chain (Banerjee et al., 2012). In response to the challenges of this type of event, this study focused on two specific project manager roles. First, the project manager would act as an extension of a customer-driven project and serve as a conduit for the voice of the customer (VOC) into the supply chain (Vlckova & Patak, 2011). Secondly, the project manager would employ his skills and manage the temporary relocation of the decoupling point (Andreev & Panayotova, 2013). The focused engagement of the project manager in these roles provides the firm with a process that is responsive to its customers and creates a competitive advantage as well as meeting the strategic needs of the customer.

Role of the Researcher

In a qualitative study the researcher is a character in the fabric, the context, the texture of the study. The researcher is an investigative instrument that interacts directly with the study participants (Stake, 2010). Hatch (2002) pointed out that data collection is non-liner and extends beyond the evidence that is generated by the research instrument. According to Yin (2014), one of the challenges for qualitative researchers is that that there are no standardized data collations procedures. Yin (2014) suggested that qualitative researchers should ask studious questions, be attentive listeners, remain flexible, have an understanding of the phenomenon, and maintain objectivity. According to Hatch (2002), in the methodology design phase of the study the researcher will define the data that is to be collected, the method of data collection, and the need (why) for data collection. Lastly, Stake (2010) described the researcher's role in data collection as being a planner, arranger, observer, examiner, inquisitor, commentator, and even a sartor of ideas.

Creswell (2013) in the presentation of the data circle provided a detailed description, or map, or template for the researches role in a qualitative study. The argument is that the data collection activates should be broader that just the instrument generated data from the interview or observation, because the researcher the primary data instrument in a qualitative study thus the activities of the researcher generates and influences the quality of the data collected (Creswell, 2013; Hatch, 2002). As such Creswell (2013) suggested seven data collecting activities that that qualitative researches perform. These activities include locating individuals and sites, access and rapport, participant sampling, data collecting, recording information, field issue resolution, and data storage (Creswell, 2013).

The first data collection activity involves locating individuals to participate in the study or site to locate the study (Creswell, 2013). Access and rapport, the second data collection activity, is conducted in sequence (Creswell, 2013). First, the researcher must gain permission (access) from the Institutional Review Board (IRB) and the study participants to conduct the study. The process of gaining access becomes the foundation for building an interactive relationship (rapport) with the study participants (Creswell, 2013). In a phenomenology participant sampling is key, this type of study requires participants that individually represent a differing experiential perspective of the phenomenon (Creswell, 2013). The data collection activity is also concerned with the form of the data that is retrieved, observations, interviews, documents, and audio visual material. The activity of recording information provides processes and procedures that will document the research activity which will fortify the validity and reliability of the study (Creswell, 2013). As part of the data collection activities the researcher should strive to anticipation field issues in addition to resolving them. The last data collection activity presented by Creswell (2013) is intended to focus the researchers' attention on the security, organization, and backup of stored research data (analog as well as digital).

Participants

Participant or participants are used as an alias for the individual or individuals that participate in the study (Merriam, 2009). In the qualitative study researchers will recruit participants that are willing to engage in a collaborative relationship (Hatch, 2002). When recruiting participants for a phenomenology, Creswell (2013) recommended identifying participants that meet some criteria, for example, all of the participants have knowledge of the phenomenon. In this regard, Hatch (2002) pointed out that a hermeneutical phenomenology

makes the assumption that the perspective of each participant is unique and it is this uniqueness that creates contextual depth that Seidman (2013) referenced.

The identification and qualification of potential participants was an important activity for the researcher (Seidman, 2013). Seidman (2013) suggested that once IRB approval was received, the researcher should develop a pool of potential participants. The pool of potential participants was solicited from existing professional contacts, as well as organizational contacts associated with the Project Management Institute, and social peer groups like Project Management Professionals. The study participants were then recruited from the pool of potential participants based on how well they fit the phenomenological criteria for the study. The potential participant had lived experience with the phenomenon that was under investigation (Stake, 2010).

Seidman (2013) suggested that initial contact was best made by the researcher as opposed to an intermediary. The researcher in this study agreed with this suggestion as there was value in using the recruiting opportunity to build rapport as well as present the nature of the study directly to the potential participant (Seidman, 2013). The primary communications method for candidate recruitment the potential participant pool was by phone. The secondary method of communications was via email. For potential participants that were considered to be part of the potential participant pool, the primary communications method was phone. The secondary method of communications was via email. The primary communications method with the active study participants was via WebEx so the interactions between the researcher and the participant could be collected and studied. The secondary method of communications with the active study participants was via email so the interactions between the researcher and the participant were documented for study.

Prior to any recruitment permission to conduct the research was granted Institutional Review Board (IRB). This approval was contingent on the detailed research proposal that was submitted by the researcher to the Institutional Review Board (Creswell, 2013, 2014; Merriam, 2009). Additionally, participants selected for the study sample signed an informed consent agreement before the study begins (Creswell, 2014; Merriam, 2009). This notified the participant of the intentions and limitations of the study as well as their rights within the study (Creswell, 2014; Merriam, 2009). Potential participants that were not allowed in the potential participant pool or to advance to the study were either not a member of the required professional experience category or failed to meet the initial criteria set by the sampling strategy.

In compliance with the IRB and the informed consent agreement, the researcher insured that rights of the participants were protected within the study. To this end, the researcher discussed the informed consent form with each participant before the participant endorsed the document (Seidman, 2013). The study was not concerned with race, age, or gender; it was, however, concerned with the participants' professional qualifications and their experiences. As such, privacy, anonymity, and confidentiality were of great importance (American Psychological, 2009; Merriam, 2009; Seidman, 2013). To this end, interviews were conducted in a safe space (Seidman, 2013). Participants' information shared beyond the dissertation chairperson was limited to the details of the interview and did not include personal participant details (Seidman, 2013). Interview transcription was conducted by the primary researcher and all participant identified were replaced with a pseudonym (Seidman, 2013). Interview recordings, field notes, transcripts, and participant information were held, stored, and secured by the researcher on a stand-alone electronic memory device that was physically locked in a filing cabinet to prevent unapproved access (Seidman, 2013). Lastly, it was important that when the

researcher made an interpretation and presented the study results, they did not make the participant vulnerable by the selection of words and language used (American Psychological, 2009; Seidman, 2013).

Research Method and Design

As presented previously the temporary relocation of the decoupling point is a strategic response by the firm to a random customer-driven event (Kim et al., 2012). The unintended consequence of this temporary relocation is the creation of turbulence in the supply chain Kim et al., 2012). It is the removal or minimization of the turbulence when the decoupling point is temporarily relocated that this phenomenological investigation seeks to address. The research method and design for this study is a qualitative methodology, with a hermeneutic phenomenological design, and interviews as the data collection instrument (Creswell, 2013, 2014). This framework seeks to understand the phenomenon or its essences as seen by the participants that experience the phenomenon described in the purpose statement (Creswell, 2013). This section of the methodology will seek to understand why this is the most appropriate research approach for this study.

Method

To justifying the appropriateness of a qualitative methodology, with a hermeneutic phenomenological design for this study is to understand how it was selected (Creswell, 2013, 2014). According to Creswell (2014) the criteria for the appropriate research methodology (an approach) is the triangulation of the worldview, the research design, and the research problem; with the variability of the researchers lived experience and the audience considerations added in to the equation. The first step is to understand each of the components in the triangulation formula offered by (Creswell, 2014).

The worldview consists of four philosophies, postpositivist (scientific method), constructivist (social construct/interpretivism), transformative (program theory/diversity), and pragmatic (practicality/what works; Creswell, 2013, 2014; Hatch, 2002). The postpositivist philosophy considers (predict, control, generalize) what is known or unknown as a reality built on external objective data that is derived rigor and experimentation (Hatch, 2002; Merriam, 2009). The constructivist philosophy considers (describe, understand, interpret) what is known or unknown as an approximation of multiple subjective realities that is derived from the contextual observation (Hatch, 2002; Merriam, 2009). The transformative philosophy considers (change, emancipates, empowers) what is known or unknown as multiple subjective reality derived from transformative inquiry (Hatch, 2002; Merriam, 2009). The pragmatic philosophy considers (deconstruct, question, interrupt) what is known or unknown as an assumption of derived from convergent or deconstructed realities (Hatch, 2002; Merriam, 2009). Creswell (2014) and Hatch (2002) argued that the postpositivism is supportive of a quantitative research approach, the constructivism is supportive of a qualitative research approach, the transformative philosophy is supportive of a qualitative research approach, and the pragmatic philosophy is supportive of a mixed methods research approach (Creswell, 2014; Hatch, 2002).

There are three design approaches, quantitative, mixed methods, and qualitative (Creswell, 2014). However, the following discussion will only focus on the quantitative and qualitative design approaches. The quantitative design approach is an exact science that can be generalized and relies heavily on statistical analysis (Creswell, 2014; Stake, 2010). Quantitative research has a predetermined design and focuses on an exact numeric description that is derived from empirical statistical analysis (deductive), and is representative of a prediction or confirmation (Merriam, 2009). The aim of quantitative design is to derive an exact explanation

from reasoned deduction (Merriam, 2009; Stake, 2010). Quantitative research is supported by two designs approaches, survey research and experimental research (Creswell, 2014; Stake, 2010).

According to Merriam (2009), qualitative research is concerned with process, meaning and understanding. Qualitative research is, interpretative, experiential, situational, and personalistic (Stake, 2010). Qualitative research has an emergent design and is focused on quality that is the result of inductive analysis of data that was retrieved from interviews, observations, or documents (Merriam, 2009; Stake, 2010). According to Creswell (2013) in a qualitative study, the researcher is the primary data collection instrument, positioning themselves in the study itself. Qualitative research is supported by four designs approaches, narrative research, phenomenological research, grounded theory research, ethnologic research and case study research (Creswell, 2013, 2014; Merriam, 2009).

This study seeks to address a specific problem, the removal or minimization of the turbulence in the supply chain that is caused by the temporary relocation of the decoupling point. More specifically, is there value in having a project manager to manage the temporary relocation so as to reduce or remove the turbulence that results in the supply chain. The questions that this study seeks to answer are open-ended and descriptive not specific and quantifiable (Creswell, 2014; Merriam, 2009; Stake, 2010). Additionally, the problem is random and not predictable (Creswell, 2014; Merriam, 2009; Stake, 2010). These understandings provide evidence against this study being a quantitative methodology (Creswell, 2014). However, when the research questions are compared to the constructionist world view as well as the qualitative approach characteristics as defined by Creswell (2014), Merriam (2009), and Stake (2010), the study does

meet the requirement for a qualitative research approach (Creswell, 2014; Merriam, 2009; Stake, 2010).

Research Design

A phenomenological research design concerns itself with the consciousness of multiple individual experiences of a phenomenon (Merriam, 2009). The phenomenon that is experienced is the event, the item, the what (Creswell, 2013; Moustakas, 1994). In this study, the phenomenon of importance (primary) is the existence of the turbulence in the supply chain (Hatch, 2002). Additionally, it could be argued that there is two secondary phenomena (the decision by the firm to temporarily relocate the decoupling point, and the actual temporary relocation) and one tertiary phenomenon (the random unforeseen customer event). Although the secondary and tertiary phenomenon will influence and are contextual to the primary phenomenon they are outside the scope of this study (Hatch, 2002). In a phenomenological research design the researcher wants to understand the individual realities of multiple experiential interactions (as it was lived) with the phenomenon (Merriam, 2009). It is this experience that is the how of the encounter with the phenomenon (Creswell, 2013; Moustakas, 1994). This study sought to understand the experiences of individuals, within firms, interacting with the turbulence. The researcher, with the amalgamation of the understandings, then captured the essence of the phenomenon in a portrait (Creswell, 2013). From this essence, the study then considered the value of using a project manager to manage the temporary relocation of the decoupling point.

There are two types of phenomenology, transcendental phenomenology and hermeneutical phenomenology (Creswell, 2013; Hatch, 2002; Moustakas, 1994; Van Manen, 1990). Transcendental phenomenology subscribes to a postpositivist philosophy, as such it is more interested describing the experience in the individuals that encounter the phenomenon than

making interpretations based on those experiences (Creswell, 2013; Hatch, 2002; Moustakas, 1994; O'Donoghue, 2007; Van Manen, 1990). While a hermeneutical phenomenology subscribes to a constructivist philosophy, as such it is more interested in making an interpretation of the individuals lived experience encountering the phenomenon than just describing those experiences (Creswell, 2013; Hatch, 2002; Moustakas, 1994; O'Donoghue, 2007; Van Manen, 1990).

The researcher in a phenomenological study is the primary instrument of observation (actions, context, interactions), intentionally participating subjectively in the study, and making interpretations that are tinted by their own experiences (Stake, 2010). Transcendental phenomenology is concerned with the researcher bias that is founded on their own previous experiences (Creswell, 2013; Hatch, 2002; Moustakas, 1994; Van Manen, 1990). As such the researcher brackets (epoche) their own biases and experiences out of the study process, thus creating a clean slate for the investigation (Creswell, 2013). Additionally, the researcher should, in the study write-up, document their previous experiences as the starting contest for the investigation (2013). Alternately a hermeneutical phenomenology is accepting of the contextual influence of the researcher's biases and previous experience (Creswell, 2013; Hatch, 2002; Moustakas, 1994; Van Manen, 1990). However, the researcher should be reflexive so as to minimize the influence their presence, responses, previous experiences, and biases have on the research study (Hatch, 2002). Creswell (2013) categorized these reflective actions to the concept of reflexivity.

The transcendental phenomenology focuses on the description of the experiential encounter where the hermeneutical phenomenology is concerned with interpretation of the experience (Creswell, 2013; Hatch, 2002; Moustakas, 1994; Van Manen, 1990). The

transcendental phenomenology seeks to discount the researcher's previous experiences while the hermeneutical phenomenology considers those experiences as part of the contest of the study (Creswell, 2013; Hatch, 2002; Moustakas, 1994; Van Manen, 1990). The answers to the research questions in this study require more than a description, an interpretation will offer a solution while at the same time set a foundation for future studies (Creswell, 2013; Hatch, 2002; Moustakas, 1994; Van Manen, 1990).

The appropriateness of the qualitative research method was justified, however, what was the appropriateness of the qualitative design? This study was not focused on experiences of one individual (a single reality) so a narrative design was not be appropriate (Creswell, 2014). This study did not support theoretical advancement, therefore a grounded theory design was not suitable (Creswell, 2014). Both ethnology and a case studies sought to describe an event or a situation so they also did not align well with this qualitative study. Thus, the appropriate research design for this study was the hermeneutical phenomenology as the research sought to understand a phenomenon as it was experienced by others and then provided a consolidated interpretive perspective on how the phenomenon was experienced.

Population and Sampling

According to Merriam (2009) there are two sampling typologies, probable and non-probable. Probable sampling, of which random sampling is the most common example of probable sampling, allows researchers to make to make generalizations (Merriam, 2009). Qualitative phenomenological data is not conducive to generalization (Creswell, 2013; Stake, 2010). Congruently randomness (random sampling) is not applicable to the selection of interview participants (Seidman, 2013). As this study was a qualitative phenomenology that had the interview as the study instrument, non-probable sampling was most appropriate (Merriam,

2009). Non-probable sampling (preferred for qualitative studies) is the second sampling typology and is concerned with the "how" question (Merriam, 2009). The purposeful (purposive) sampling approach is the most appropriate non-probable sampling strategy for qualitative studies (Creswell, 2013; Merriam, 2009). Purposeful sampling assumes the researcher the most qualified and the most appropriate instrument to develop the study sample (Merriam, 2009). Together, Creswell (2013) and Merriam (2009) presented 16 methods (strategies) for purposeful sampling in qualitative studies.

When developing the study sample, the researcher needed to consider who (or what) was being sampled, the sample form that was appropriate, what was the sample size, and was the sampling method consistent with the study methodology (Creswell, 2013). Study candidates were considered to be a part of the potential participant pool if they fit one of two professional experience categories. The first professional experience category was supply chain professionals with responsibility for production planning, or materials scheduling, and had a professional understanding of project management. The second professional experience category was project management professionals that had an understanding of supply chain management, production planning, or materials planning. The pool of potential participants was solicited from existing professional contacts, as well as organizational contacts associated with the Project Management Institute, and social peer groups like Project Management Professionals.

The study participants for the sample were then recruited from the pool of potential participants based on how well they fit the phenomenological criteria that required study participants to have lived experiences of the phenomenon under investigation (Creswell, 2013; Hatch, 2002; Moustakas, 1994; Van Manen, 1990). Creswell (2013) suggested that because a qualitative phenomenology requires participants to have lived experiences of the phenomenon

that the most appropriate sampling method to use in a is the criterion method of sampling. With the criterion method the sample and its participants must meet a study specific quality assurance criteria (Creswell, 2013). The size of the sample is subjective in that the sample needs to be large enough for the study data to reach saturation (Creswell, 2013; Merriam, 2009, p. 351). This study had a minimum sample size of five.

Data Collection

O'Donoghue (2007) pointed out that a hermeneutical phenomenological study seeks to understand human interactions and their motivations. In order to understand these interactions and provide a wider perspective, the phenomenologist is interested in the life experience of the participants as a lived interaction with the phenomenon (Merriam, 2009; O'Donoghue, 2007). As these engagements are not the lived experience of the researcher, they must understand the reality of the phenomenon by discerning the essence of the interactions of the participants as a composite (Hatch, 2002; Merriam, 2009; O'Donoghue, 2007). Thus, in the data collection process the researcher (phenomenologist) is the primary instrument (Creswell, 2013). Further Creswell (2014) pointed out that researchers, in a phenomenological study, engage interviewing as the most appropriate data collection instrument when developing the essence of any experiential interaction.

Instrument

The researcher in this phenomenological study considers three questions (one primary and two secondary) that are seminal in developing a response to the supply chain turbulence caused by the temporary relocation of the decoupling point. The primary question: Does the introduction of a project manager add strategic value when customer-driven random events occur that require additional flexibility in the supply chain? The two sub-questions: First, does a

project manager have the ability to add strategic value by extending the voice of the customer (VOC) deeper into the organization while effectively integrating the needs of both the customer and the supply chain in support of the strategic objectives of the firm? Secondly, will the engagement of a project manager in the management of the temporary relocation of the decoupling point minimize the potential for the bullwhip effect in the supply chain while meeting the customers' random and unique project need? It is these questions that provide the direction for the implementation of the appropriate data collection instrument (Merriam, 2009).

In the hermeneutical phenomenological design the researcher is the primary instrument of data collection, subjectively participating in the study, and making interpretations that are tinted by his own experiences (Stake, 2010). Additionally, there are four types of collection techniques (instruments) that are available to the researcher in a phenomenological study, qualitative observation, qualitative (or in-depth) interviews, qualitative documentation, and qualitative audio/video material (Creswell, 2013, 2014; Hatch, 2002; Merriam, 2009). The phenomenon in this study is not available for observation by the researcher, there is no known audio/video material that provides a depiction, and the researcher does not have access to documentation that provides a description (Creswell, 2014; Merriam, 2009). The in-depth interview provides information that is unique to each of the participants experience with the phenomenon thus allowing the researcher to make a consolidated interpretation based on these individual participant perspectives (Hatch, 2002). For this phenomenology, the interview is the most appropriate instrument for the researcher to employ for data collection.

Open-ended questions are employed in the interview to solicit responses that allow the researcher to explore the lived experience of the participants as they engaged the phenomenon (Seidman, 2013). The researcher's exploration is concerned with the experience of the

participant and the meaning that the participant draws from the experience (Seidman, 2013). The researcher then considered the individual experience of each participant as a transitive component of the cumulative essence of how the phenomenon was experienced (Seidman, 2013). To gain the most from the interview process, a semi-structured interview was most appropriate as it allowed the researcher the opportunity to gain information from the open-ended probing questions that then allowed the researcher the flexibility to apply that information in the development of more focused follow-up questions that promote reflection, provide explanation, and allow clarification (Creswell, 2014; Merriam, 2009; O'Donoghue, 2007).

The interview questions (Appendices A and B) were developed and organized to reflect the three criterion, one primary criteria for all participants and two secondary criteria (professional experience) that help to categorize participants. Questions that consider the primary criteria, participants have a lived experience with the phenomenon, are asked of all participants equally (Stake, 2010). These questions allowed the participant to recount their experience with the phenomenon and reflect on the meaning derived from that experience. With regards to the two secondary categorical grouping criteria, participants that are supply chain professionals and participants that are project management professionals, the questions reflect the participants' category grouping. These questions first made inquiries regarding the phenomenon from the perspective that is specific to a particular participant grouping category. Secondly, these questions then requested the participants to consider the phenomenon from the perspective of the grouping category that is not their own. The questions that were category grouping specific, provided the study with a historical context for the participants' reflections and the meaning that is derived from the reflections.

The interview as a study instrument is not perfect, as it has both advantages and disadvantages. Seidman (2013) argued the interview as an instrument of inquiry is suited well for the discovery of meaning by participants and researchers through the use of language. The interview provided a structured approach to gain insight and understanding of the lived experiences of the participants that engage the phenomenon (Seidman, 2013). The interview is appropriate when the participants are dispersed and direct observation is not possible (Creswell, 2014). However, as an observation is not possible the setting for the interview is separated by time and is different from setting where the phenomenon was encountered. An interview is applicable when historical and contextual information is important (Creswell, 2014). Conversely the researcher's view of the phenomenon is indirect and shaped by the lived experience of the participant. Additionally, the accuracy of a participant's reflective perspective may vary (Creswell, 2014). The accuracy of the participants experience with the phenomenon can be mitigated by the control the interview process provides the researcher over question. This control allows the researcher the flexibility to seek immediate clarification, depth, and color within the reflective process (Creswell, 2014).

Validity and reliability is a challenge when the interview is the single instrument of data collection for data collection (Seidman, 2013). In response to this challenge the interview process asks the participants to reflect separately on three sequential focuses (history, experience, and meaning) with regards to themselves and the phenomenon (Seidman, 2013). This interview process provides contextual support for the individual participants' perspective, thus reinforcing the reliability of the interview data (Seidman, 2013). The contextual foundation also serves to ground the researcher and allows him to be reflective (Creswell, 2013; Hatch, 2002). The consistency of the interview between participants and the interview questions also support the

validity and reliability of the instrument and the data collected (Creswell, 2013; Seidman, 2013). Additionally, the alignment of participant grouping criteria and the interview questions provides differing professional perspectives of the phenomenon, further supporting validity and reliability (Creswell, 2013; Seidman, 2013). The validity and reliability of the interview as a data collection instrument are also fortified by the supportive relationship between the researcher's field notes, the audio/video interview recording, and the interview transcription (Creswell, 2013; Seidman, 2013). The researcher's field notes (raw data), the audio/video interview recording (raw data), participants' pseudonym identifier key (raw data/pseudonym), interview transcription (with pseudonym applied), and research journal (with pseudonym applied) are held, stored, and secured by the researcher on a stand-alone electronic memory device. The research journal and interview transcripts are made available upon request.

Data Collection Technique

For this study, the appropriate data collection instrument was an interview conducted by the researcher with supply chain and project management professionals that have lived experiences with the phenomenon. The interview was sub-divided into three sequential focuses (history, experience, and meaning) that provided insight into the participant's experience (Seidman, 2013). Interview questions that reflected the first focal element, history, solicit contextual information about the individual participants and the setting that encompasses both the phenomenon and themselves (Hatch, 2002; Seidman, 2013). The second focal element was concerned with the individual participant's interaction with the phenomenon, as such these interview questions sought to collect data that allowed the researcher to see a verbal portrait of the participants experience (Seidman, 2013; Stake, 2010). Finally, the remaining interview

questions, the third focal element, prompted the individual participants to reflect and articulate the meaning of their lived experiences with the phenomenon (Merriam, 2009; Seidman, 2013).

The interview was conducted in two recorded phone calls (WebEx Portal). The purpose of the first call was to discuss the consent form, summarize the intent of the study, to provide responses to any questions the participants may have had and to allow the researcher to gather background (historic) information for the second interview call. In addition to introducing the individual participants to the study, responses to general interview questions (Appendices A and B) were solicited for the purpose of providing the study with a historical context for the individual participants experience with the phenomenon. This historic data provided a contextual foundation for the second and final interview with the participant. The second interview call was a structured informal interview where the participants and the questions focused the individual participants lived experience with the phenomenon as well as the meaning that they derived from reflecting on the experience (Appendices A and B). All of the interview questions were the same for both the supply chain professionals and the project management professionals (Appendices A and B). However, in the interview protocol (Appendices A and B) the questions were duplicated then personalized to reflect participants profession, supply chain professionals (Appendix A) and project management professionals (Appendix B).

The initial interview call as well as the second interview call was recorded. Both calls were conducted via WebEx. WebEx is a collaborative audio/video teleconference tool that provides the ability to record audio, video, and file sharing/collaboration (example: the informed consent document). Other than the informed consent no other collaborative files or documents were shared. All questions and responses were delivered verbally and recorded. The audio portion of the recording captured the verbal story of the individual participant's experience.

While simultaneously the video portion of the recording captured the individual participant's nonverbal communications. In addition to the WebEx recording, the researcher maintained field notes that were used to document the researcher's participant observations from every interaction with the individual participants. The field notes helped the researcher document for each individual participant, the researcher's pre-interaction preparations notes, email exchanges, notes regarding phone interactions, as well as observational notes from the WebEx (recorded) interviews.

Data Organization Techniques

In addition to the retrieval of data from, observations, interviews, documents, and audio visual material the activity of data collection was also concerned with how the accumulated data are recorded and organized (Creswell, 2013; Hatch, 2002). Developing a strong cataloging system resulted in a valid and reliable method of collecting the raw data that is generated from the interview process (Creswell, 2013; Seidman, 2013). The activity of documenting and creating a record of the received information provided processes and procedures that strengthen the research activity, thus fortifying the validity and reliability of the study (Creswell, 2013). The interview provided the researcher a platform of engagement that is shared with the study participants. These engagements were documented, in the researcher's field notes and the WebEx audio/video recordings. These notes and recordings served as the repository for the raw data generated from the interview process (Creswell, 2013; Seidman, 2013).

The design of the interview questions were developed to support a reliable cataloging system for the data generated by the interview process (Seidman, 2013). The interview questions (Appendices A and B) were developed and organized to reflect the three criteria, one primary criteria (experience with the phenomenon) for all participants and two secondary criteria

(professional experience) that helped to categorize participants (Creswell, 2013; Stake, 2010). The primary criteria served as a pre-interview categorization step (Bouwers, Visser, & Deursen, 2012; Creswell, 2013). All other categorizing (coding) occurred post-interview as the raw data were transcribed into an electronic format and then analyzed (Hatch, 2002). As part of this process the researcher sought to identify significant statements and quotes across all of the interviews that lead to reoccurring strands of thought or categorical themes (Creswell, 2013). From the themes the researcher developed a textural description of experience of the individual participant. As well as a structural description that provided a contextual landscape of the setting surrounding the individual participants experience (Creswell, 2013). The researcher documented and reflected on this process as part of the research journal (Hatch, 2002).

Field note and interview transcription was transacted by the primary researcher and all participant identifiers were replaced with a pseudonym (Seidman, 2013). In their original form the field notes were hand written so they were copied, by the researcher, into an electronic research journal (One Note containing both Word and Excel documents). In addition to the field notes the research journal was used to document, the data analysis process, emergent categorical themes (coding), research communications, and the researcher reflections (textural and structural data reflections; Creswell, 2013; Hatch, 2002). Likewise, the interview recordings were also transcribed electronically into a word document (in One Note; Seidman, 2013).

Creswell (2013) pointed out that data security is paramount, and the researcher is responsible for the security of stored research data (analog as well as digital). The study did not consider or segregate based on race, age, or gender, it was however concerned with the participants' professional qualifications and their experiences. Privacy, anonymity, and confidentiality are of great importance to the researcher, the participants, and the study

(American Psychological, 2009; Merriam, 2009; Seidman, 2013). Transitioning the field notes and interview recordings to word documents afforded the researcher the opportunity to maintain the confidentiality of the participants by replacing all participant identifiers with an individually assigned pseudonym for each participant. The individual participant pseudonym was generated using the random number generator in Excel. The researcher used this tool to generate a random three-digit number for each participant that was then used as the pseudonym for the participants' identifier for the rest of the study.

The researcher's field notes (raw data), the audio/video interview recording (raw data), participants' pseudonym identifier key (raw data/pseudonym), interview transcription (with pseudonym applied), and research journal (with pseudonym applied) are held, stored, and secured by the researcher on a stand-alone electronic memory device. Further the stand-alone electronic memory device is physically locked in a filing cabinet that is located in a locked home office so as to prevent unapproved access to the data. Participants' information that was shared beyond the dissertation chairperson is limited to the details of the interview and did not include personal participant details (Seidman, 2013). The research journal and interview transcripts were made available upon request.

Data Analysis Technique

A hermeneutical phenomenology subscribes to a constructivist philosophy, as such the researcher was focused on interpreting the individuals lived experience encountering the phenomenon rather than just describing those experiences (Creswell, 2013; Hatch, 2002; Moustakas, 1994; O'Donoghue, 2007; Van Manen, 1990). In this study, the temporary relocation of the decoupling point was a strategic response by the firm to a random customer-driven event (Kim et al., 2012). The unintended consequence of this temporary relocation was

the creation of turbulence in the supply chain (Kim et al., 2012). In this study, the phenomenon was the existence of the turbulence in the supply chain resulting from the temporary relocation of the decoupling point (Hatch, 2002).

It is the removal or minimization of the turbulence when the decoupling point was temporarily relocated that this phenomenological investigation seeks to address. As such this research focused on three questions (one primary and two secondary). The primary question: Does the introduction of a project manager add strategic value when customer-driven random events occur that require additional flexibility in the supply chain? The two sub-questions: First, does a project manager have the ability to add strategic value by extending the voice of the customer (VOC) deeper into the organization while effectively integrating the needs of both the customer and the supply chain in support of the strategic objectives of the firm? Secondly, will the engagement of a project manager in the management of the temporary relocation of the decoupling point minimize the potential for the bullwhip effect in the supply chain while meeting the customers' random and unique project need?

Both Creswell (2013) and Hatch (2002) provided structured techniques for conducting data analysis in a hermeneutical phenomenology study. The structure suggested by Creswell (2013) was not as detailed as the one suggested by Hatch (2002), however they were both similar in nature and in this study, were integrated into one single approach to data analysis. This was possible as Creswell (2013) and Hatch (2002) both focus on the research questions to guide their approaches.

It is important to perceive the data as a whole (Hatch, 2002). Not only the lived experience of the participant with the phenomenon but also the context (setting, landscape, environment) in which the participant engaged the phenomenon (Hatch, 2002). Creswell (2013)

describes this as horizonalization, where the researcher focused on significant quotes, statements, or sentences (Hatch, 2002). As part of building an understanding of the context that surrounds the participant's interaction with the phenomenon the researcher was also interested in the history of both the participant and the pheromone leading up to the interaction (Seidman, 2013). Additionally, in an effort to provide context Hatch (2002) suggested that the researcher input impressions, information gleaned, and reflections into the research journal for latter integration as contextual support.

The researcher developed seminal impressions that were derived from the process of horizonalization (Creswell, 2013; Hatch, 2002). The impressions were then categorized (coded) into themes that were found throughout the data (Creswell, 2013; Hatch, 2002). Creswell (2013) described this part of the data analysis process as developing clusters of meaning. This process was interpretive and the researcher develops the categorical themes based on the participant responses to the interview questions (Seidman, 2013). The researcher built on the thematic categories to describe the lived experience of the participants, a textural description (Creswell, 2013). The researcher also integrated the context or setting surrounding the participant's experience with the phenomenon, a structural description (Creswell, 2013).

The textural and structural descriptions were representative of the lived experiences of the study participants and not the lived experience of the researcher (Creswell, 2013; Hatch, 2002; Merriam, 2009; O'Donoghue, 2007). As such the researcher must understand the reality of the phenomenon by discerning the essence of the amalgamated interactions of the participants with the phenomenon (Hatch, 2002; Merriam, 2009; O'Donoghue, 2007). From the integration of the textural and structural description, the researcher created this composite description that was able to present the essence of the participants lived experience with the phenomenon

(Creswell, 2013; Hatch, 2002). In this study, the composite description (the essence of the experience) provided an interpretive understanding of how the turbulence within the supply chain was experienced by individuals, within firms (Creswell, 2013). From this composite description (the essence of the experience) the researcher then considered the value of using a project manager to manage the temporary relocation of the decoupling point (Creswell, 2013).

As part of the data analysis process the researcher used several software tools. To assist in the organization of the data, One Note was used to consolidate the audio/video recordings of the interview, the transcripts from the interview recordings, the digitized field notes, and the research journal. Given the small size of the sampling, no more than thirty participants, Excel was the most appropriate software tool for data analysis. Excel provided the random number generator used to create a random three-digit number for each participant that was then used as the pseudonym for the participants' identifier for the rest of the study. In Excel the categorical themes generated from the interview were applied to cross tabulate the known characteristics from the conceptual framework, the theories supporting the conceptual framework, and project managers with the interview responses of the study participants. Additionally, from the transcripts a count (tally) of the participant's usage of key words or phrases was also entered and cross-tabulated with other elements in excel.

Reliability and Validity

This study took a qualitative research approach, using a qualitative method, hermeneutic phenomenological design, and interviews as the research instrument (Creswell, 2013; Hatch, 2002; O'Donoghue, 2007). The researcher takes a qualitative approach when they seek meaning and understanding through the interpretation of, experiential, situational, personalistic, and contextual events (Merriam, 2009; Stake, 2010). Additionally, hermeneutical phenomenology

subscribes to a constructivist philosophy that is interested in the interpretation of the individuals lived experience of the encounter with the phenomenon (Creswell, 2013; Hatch, 2002; Moustakas, 1994; O'Donoghue, 2007; Van Manen, 1990). The researcher in a hermeneutical phenomenology is the primary instrument of observation (actions, context, interactions), intentionally participating subjectively in the study, making interpretations that are tinted by his own biases and previous experience (Creswell, 2013; Hatch, 2002; Moustakas, 1994; Stake, 2010; Van Manen, 1990).

With regards to reliability and validity it is the assumed lack of objectivity in a qualitative study that troubles many academicians and researchers (Seidman, 2013). In a qualitative research the interview questions are open ended and descriptive, not specific and quantifiable (Creswell, 2014; Merriam, 2009; Stake, 2010). Further the study problem is random and not predictable (Creswell, 2014; Merriam, 2009; Stake, 2010). Only by understanding the essence of the lived experience of those participants that encountered the phenomenon can the researcher develop an interpretive response to the interview questions (Creswell, 2013). In reference to subjectivity in qualitative studies Seidman (2013) argued that researchers that are deliberate, organized, and conscious of the data collection and analysis in the study will promote reliability and validity. In an effort to fortify reliability and validity in a qualitative study Merriam (2009) encouraged the researcher to be attentive to the way the study is conceptualized, the collection of data, analysis of data, as well as data interpretation, and how the findings are presented. The reliability and validity of a qualitative study are dependent on the rigor, trustworthiness, authenticity, and the credibility of the study (Creswell, 2014; Merriam, 2009; Seidman, 2013).

Reliability

In qualitative studies, reliability is dependent on the ability of other researchers to replicate the study (Merriam, 2009; Seidman, 2013). Qualitative studies tend to focus on human behaviors that are never static, thus becoming problematic when the researcher is attempting to establish reliability (Merriam, 2009). Problematic because the time of the behavior, context of the behavior, and the behavior itself cannot be replicated as it originally occurred (Merriam, 2009). In qualitative research, reliability refers to the consistency of a particular researcher's approach with the approaches of other researchers' and other qualitative studies (Creswell, 2014). Merriam (2009) described reliability as being dependable or consistent. In a qualitative study, it is more important that outside researchers concur with the research processes that a particular researcher applied and the results are plausible given the data that were collected (Merriam, 2009).

In this study reliability occurred on two levels, first was the reliability of the study itself, and secondly the reliability of the data collection instrument. At the study level, the researcher engaged an independent reader to examine the study and provide feedback concerning the consistency of what was read (Merriam, 2009). The researcher in this study also attempted to provide a clear path of progression (from the problem statement, then the conceptual framework, followed by the data collection and analysis) to the interpretation of the data and the presentation of the findings (Merriam, 2009). Other researchers and readers can follow the path and understand how the researcher developed his interpretation of the experience as well as the findings. Supporting this path is a clear audit trail that extends from the beginning of the research study to the presentation of the findings (Merriam, 2009). The audit trail for this study includes IRB documents, informed consent forms, the interview protocol, email communications

(participant request communications), field notes (containing impressions and thoughts from all participant interactions to include the interview), the audio/video recording of the interview, and the research journal (containing the transcriptions of the field notes, interviews, and all of the data analysis; Creswell, 2013, 2014).

The second level of reliability focused on the data collection instrument. The interview process asked the participants to reflect separately on three sequential focuses (history, experience, and meaning) with regards to themselves and the phenomenon (Seidman, 2013). This interview process provided contextual support for the individual participants' perspective, thus reinforcing the reliability of the interview data (Seidman, 2013). The contextual foundation also served to ground the researcher and allowed them to be reflexive (minimize researcher biases;Creswell, 2013; Hatch, 2002). The consistency of the interview between participants and the interview questions (Appendices A and B) also support further the reliability of the instrument and the data collected (Creswell, 2013; Seidman, 2013). The reliability of the interview as a data collection instrument was also fortified by the researcher's field notes, the audio/video interview recording, and the interview transcription (Creswell, 2013; Seidman, 2013).

Validity

Seidman (2013) suggested that validity is the reflection of the quality of the researcher's craftsmanship. Validity is about the authenticity, credibility, transferability, and dependability of the study (Creswell, 2013; Merriam, 2009; Seidman, 2013). Within a qualitative study validity has two perspectives, internal validity and external validity (Creswell, 2013, 2014; Merriam, 2009).

Internal validity is concerned with how closely the findings of the qualitative research study match reality (Merriam, 2009). Specific to this study the researcher sought clarity in understanding how each individual participant lived the experience with the phenomenon, and then derive meaning from their experiences (Merriam, 2009; Seidman, 2013). As objective reality is not an option in this qualitative study the researcher used triangulation to support the validity of the research (Merriam, 2009). Triangulation occurs when the researcher is able to corroborate the data using multiple data sources (Merriam, 2009). Triangulating for validity is a challenge when the interview is the single instrument of data collection (Seidman, 2013). In response to this challenge the interview process asks the participants to reflect separately on three sequential focuses (history, experience, and meaning) with regards to themselves and the phenomenon (Seidman, 2013). The validity of the data collected from the interview was also fortified by the supportive relationship between the researcher's field notes, the audio/video interview recording, and the interview transcription (Creswell, 2013; Seidman, 2013). Alternatively, validity was also supported by having a sampling group large enough to meet the saturation requirement (the minimum number of participants needed to no longer generate new data) for the study (Merriam, 2009). Lastly, the researcher shared the preliminary data analysis from each interview with the appropriate study participant so he or she can validate his or her perception of the lived experience with the phenomenon was reflected in the interview data (Creswell, 2013). This alternate validation process is known as member checking (Creswell, 2013).

External validity is concerned with how the findings from the study can be generalized and applied to other situations (Merriam, 2009). Qualitative phenomenological data is not conducive to generalization (Creswell, 2013; Stake, 2010). The external validity of a qualitative

study is reflected in the richness of the description so as to promote the transferability of the findings (Merriam, 2009). The richness of description relates to the ability of the researcher to provide the contextual depth that allows the reader to recognize similarities between the research findings and other situations (Merriam, 2009). Alternatively, the purposeful variation that results from the alignment of participant grouping criteria and the interview questions provides differing professional perspectives of the phenomenon, further supporting the validity of the study (Creswell, 2013; Merriam, 2009; Seidman, 2013).

Transition and Summary

This study took a qualitative research approach, using a qualitative method, hermeneutic phenomenological design, and interviews as the research instrument (Creswell, 2013, 2014; Hatch, 2002; O'Donoghue, 2007). The researcher sought to address the problem of turbulence in the supply chain that resulted from the temporary relocation of the decoupling point (Kim et al., 2012). The relocation of the decoupling point is a strategic response by the firm to a random customer-driven event (Kim et al.). Specifically, the researcher considered three questions (one primary and two secondary) that are seminal in developing a response to the supply chain turbulence caused by the temporary relocation of the decoupling point. The primary question: Does the introduction of a project manager add strategic value when customer-driven random events occur that require additional flexibility in the supply chain? The two sub-questions: First, does a project manager have the ability to add strategic value by extending the voice of the customer (VOC) deeper into the organization while effectively integrating the needs of both the customer and the supply chain in support of the strategic objectives of the firm? Secondly, will the engagement of a project manager in the management of the temporary relocation of the decoupling point minimize the potential for the bullwhip effect in the supply chain while meeting

the customers' random and unique project need? It is these questions that guide the methodology for this study (Merriam, 2009).

The methodology (Section 2) provided definition to the study purpose, the researcher's role, and who the participants were in the study. This section also provided a structured map, a methodology, which guides the active research portion of the investigation. Methodology linked the activities of the research method and design, with the study sampling plan, the data collection, and the data analysis. Lastly, this section established how the reliability and validity of the study were supported. The discourse in Section 2 justifies and affirms the appropriate methodology for this research study as a qualitative research approach, using a qualitative method, hermeneutic phenomenological design, and interviews as the research instrument (Creswell, 2013, 2014; Hatch, 2002; O'Donoghue, 2007). This methodological schema sought to understand the essence of the lived experience of those participants that encountered the phenomenon described in the purpose statement of the research study (Creswell, 2013). The next section, Section 3, will present the findings that result from the application of the methodology (Section 2).

Section 3: Application to Professional Practice and Implications for Change

This section of the study begins with the researcher providing an overview of the study, presenting the findings, and including a discussion of professional practices. Further the researcher also provided recommendations for actions prompted by the study and opportunities for future study. This section also served as the platform for the researcher to consider any personal biases or preconceived notions that may have influenced the study and to reflect the study experience as well as the study results from a biblical perspective. Lastly, this section closes with the researcher summarizing the study and the conclusions that were derived from the study.

Overview of Study

The temporary relocation of the decoupling point is a strategic response by the firm to a random customer-driven event (Kim et al., 2012). The unintended consequence of this temporary relocation is the creation of turbulence in the supply chain (Kim et al., 2012). It is the removal or minimization of the turbulence when the decoupling point is temporarily relocated that this phenomenological investigation seeks to address. The research focused on three questions (one primary and two secondary) that are seminal in developing a response to the challenge caused by the turbulence. The primary question: Does the introduction of a project manager add strategic value when customer-driven random events occur that require additional flexibility in the supply chain? The two sub-questions: First, does a project manager have the ability to add strategic value by extending the voice of the customer (VOC) deeper into the organization while effectively integrating the needs of both the customer and the supply chain in support of the strategic objectives of the firm? Secondly, will the engagement of a project manager in the management of the temporary relocation of the decoupling point minimize the

potential for the bullwhip effect in the supply chain while meeting the customers' random and unique project need?

Section 1 of the study showed consideration was given to the definition and purpose of the research study, Section 2 provided a methodology, which guided the active research portion of the investigation. The methodology was used to link the paradigm (how the problem is perceived), the research questions that govern the study, to the appropriate study method, and the desired outcome (O'Donoghue, 2007). The methodology for this research study followed a qualitative approach, which employed a qualitative method, and was supported by a hermeneutic phenomenological design (Creswell, 2013, 2014; Hatch, 2002; O'Donoghue, 2007). As such interviews were chosen as the research instrument for this study (Creswell, 2013, 2014; Hatch, 2002; O'Donoghue, 2007).

The sections that follow present the findings and conclusions from the analysis of the collected data. Interviews conducted by the researcher with the study participants served as the primary source of data in the study. Additionally, the study the participants were either supply chain or project management professionals, and had lived experiences with the phenomenon. The interview was sub-divided into three sequential focuses (history, experience, and meaning) that provide insight into the participant's experience (Seidman, 2013). Interview questions that reflect the first focal element, history, solicit contextual information about the individual participants and the setting that encompasses both the phenomenon and themselves (Hatch, 2002; Seidman, 2013). The second focal element is concerned with the individual participant's interaction with the phenomenon, as such these interview questions seek to collect data that allows the researcher to see a verbal portrait of the participants' experience (Seidman, 2013; Stake, 2010). Finally, the remaining interview questions, the third focal element, provided a

prompt for the individual participants to reflect and articulate the meaning of their lived experiences with the phenomenon (Merriam, 2009; Seidman, 2013). All of the interview questions are the same for both the supply chain professionals and the project management professionals (Appendices A and B). In the interview protocol (Appendices A and B) the questions are duplicated then personalized to reflect participant's profession, supply chain professionals (Appendix A) and project management professionals (Appendix B).

The researcher developed seminal impressions that were derived from the process of horizonalization (Creswell, 2013; Hatch, 2002). The impressions were then categorized (coded) into themes that are found throughout the data (Creswell, 2013; Hatch, 2002). This was an interpretive process where the researcher develops the categorical themes based on the participant responses to the interview questions (Seidman, 2013). The researcher builds on the thematic categories to describe the lived experience of the participants, a textural description (Creswell, 2013). The researcher also integrates the context or setting surrounding the participants experience with the phenomenon, a structural description (Creswell, 2013).

As part of the data analysis process, the researcher used several software tools. To assist in the organization of the data, One Note was used to consolidate the audio/video recordings of the interview, the transcripts from the interview recordings, the digitized field notes, and the research journal. Give the size of the sampling, seven participants, Excel was the most appropriate software tool for the data analysis. In Excel the categorical themes generated from the interviews were cross-tabulated with the known characteristics of the conceptual framework, the theories supporting the conceptual framework, and project managers with the interview responses of the study participants. Additionally, from the transcripts, a tally of the participant's

usage of key words or phrases was also considered, entered, and cross-tabulated with other elements in Excel.

Upon completion of the analysis four themes emerged. The first theme was complexity. Complexity, in this case, is the complexity that is inherent in business, the chaos the supply chain is attempting to manage across multiple organizations, or the internal complexity that operations are working to reign in, and even the strategic complexities of the competitive market place. The second theme is culture. The human interactions that define an organization and that colors how an organization conducts its business. The third theme is understanding. The ability of the organization or the individual to critically consider their surrounding in all of its complexity and then generate a connected interaction or response. The fourth and final theme is communications. The ability of the organization to communicate formally and informally in a coordinated response to the complexities of its internal and external environment. In summary, the researcher found each of these themes are representative of the variables that drive the actions and interactions with the customer, in the firm, supply chain, the operational organization, as well as the actions of SCM and PM. In general, all of the participants agreed the PM is capable successfully responding to each of the research questions. However, the thematic variability (Complexity, Culture, Understanding, and Communications) that is encountered from one firm to the next as well as the actual problem from one incident to the next may or may not justify the permanent commitment of a project manager as a solution.

Presentation of the Findings

The decoupling point within the supply chain is a boundary of stabilization. It is at this point that the supply pushes to meet the demand pull within a hybrid push/pull supply chain (Teo et al., 2012). Within the supply chain the decoupling point is tension that results from the

push/pull forces within the hybrid supply chain (Teo et al., 2012). At the location of the decoupling point there is an equilibrium or a stability that exists between the two forces (Pomeau & Villermaux, 2006; Taylor, 2011). When a customer-driven random event is introduced, it causes the boundary of stability or tension at the point of equilibrium to fail, resulting in a loss in stability (Pomeau & Villermaux, 2006; Taylor, 2011).

This tension is important because of the stability that it provides at the point of contact between opposing forces with competing interest (Calvão & Brigatti, 2014). In the case of this study, there is a need on the supply side of the supply chain to promote stability and control costs while at the same time the demand side of the supply chain needs to react to randomness and unpredictability in the marketplace (Kim et al., 2012). Within the supply chain, once the decoupling point is established and the boundary stability between the push side and the pull side of the supply chain are set, there is stability that many supply chain organizations are hesitant to disturb (Banerjee et al., 2012). Because of the need for stability once the optimal location of the decoupling point is set, it is hard to relocate quickly, especially for a temporary short-term requirement (Andreev & Panayotova, 2013). To do so could have destabilizing effects within the supply chain as the relocation of the decoupling point breaks the existing surface tension between the supply push and the demand pull within the supply chain (Dansong & Wenxue, 2005). Within the decoupling model, the decoupling point location and its possible positions of temporary relocation must be implemented in such a way as to maintain the stability and integrity of the supply chain (Andreev & Panayotova, 2013). At the very least there needs to be a controlled relocation process that allows the organization to maintain the boundary of stability while the temporary changes are executed (Pomeau & Villermaux, 2006; Taylor, 2011).

In Figure 1, the arrows labeled ‘Normal Decoupling Point Location,’ below and to the left of the model represent the location of the decoupling point under normal circumstances. However, this study focused its investigation on the management of the temporary relocation of the decoupling point. Specifically in situations where normal stability had been disturbed and the value of engaging a project manager to assist in temporarily relocating the decoupling point to the position of one of the six arrows, labeled proposed flexible decoupling point locations, on the bottom right of the decoupling model. The motivation for the temporary position change is a customer-driven random event shown at the right side of the decoupling model.

The study population is representative of the different elements and levels within the decoupling model (Figure 1). The study population is hierarchal represented by participants that are in lower management, middle management, and top management thus providing vertical perspective of the organization and the decoupling point. Secondly the population of the study is representative of the different organizations that engage horizontally along the supply chain, vendor management, operations planning, plant management, operations management, operations project management, systems project management, and sales operations (product management). This horizontal view brings differing perspective of a supply chain location or event (customer, manufacturing, procurement, vendor, and the decoupling point) based on proximity to the location or event. Lastly, the population represents both SCM and PM professionals. As a population, the participants (personal communication, April 12-20, 2017) acknowledged in principal the value of a project manager’s management of the temporary relocation of the decoupling point while minimizing supply chain turbulence and to represent the VOC during the process. However, they also suggested, although possible and plausible, such an intervention is not universal and must be done in consideration of the four themes: complexity,

culture, understanding, and communications (study participants, personal communication, April 12-20, 2017).

As previously stated the interview protocol (Appendices A and B) is sub-divided into three sequential focuses (history, experience, and meaning) that provide insight into the participants experience (Seidman, 2013). There are six primary interview questions (subdivided into 78 total study questions). Interview question 1 was looking for general information and is historical as well as experiential in nature. Interview question 2 was related to research question 1 and is experiential while seeking meaning. Interview questions 3-5 gave consideration to research question 2A and are also experiential while seeking meaning. Finally, interview question 6 was focused on research question 2B and is once again experiential while seeking meaning.

As the interviews progressed it became apparent that the questions and responses fell into three categories (preliminary themes) strategy, systems, and processes. The strategy category was interested in the strategic application or interaction of the discussion topic. The systems category was focused on the holistic interconnectedness of the discussion topic (IT system, Supply Chain, and organization). The process category was concerned with the organization of workflows as they relate to the topic of discussion. As the analysis progressed these categories gain in complexity, culture, understanding, and communications. These four emergent themes cut across all three categories, strategy, systems, and process. Strategy, systems, and processes exist as an approach to extend, share, facilitate, or manage complexity, culture, understanding, and communications.

Over the next few pages the emergent themes complexity, culture, understanding and communications will be presented. However, first the interview questions are discussed in total

by category. All of the questions are discussed from a multi-dimensional perspective, SCM to PM, management levels, or supply chain location.

Strategy

In interview question 1, participants were asked to provide their experience with SCM strategy, and competitive strategy. For the most part all of the top management participants (SCM and PM; personal communication, April 12-20, 2017) had experience will the implementation or creation of both strategies. The middle managers were both providers of information for both strategies and participants in the implementation of SCM (study participants, personal communication, April 12-20, 2017). At the lower management level all participants were contributors to SCM strategy supported through supply chain operations or sales operations (study participants, personal communication, April 12-20, 2017). From the perspective of the participants' position in the supply chain their input would parallel that of their professional experience in either SCM or PM. Those in SCM would have a strategic focus that was either supply facing or demand facing. The only exception was the participants that were top level managers and they had to ensure the SCM strategy was supportive of the competitive strategy.

Interview question 2 considered the decoupling point and the turbulence caused by its temporary relocation from a strategic view. At top levels of management, on the demand side of the decoupling they were more likely to move the decoupling point closer to the customer (study participants, personal communication, April 12-20, 2017). While the participants (personal communication, April 12-20, 2017) that were on the supply side or at the decoupling point, were more likely to quote and hold to the minimum lead-time. As postulated by one of the top managers this may be due to the metrics that a particular supply organization uses or it may be

due to the way budgets are used (Participant 4, personal communication, April 18, 2017). Participant 2 stated it this way, “From a metric stand point we focus on quality. Specifically on the supply side of the equation, this means quality of delivery (or availability) which equates to predictability and is by its nature inflexible” (personal communication, April 12-19, 2017). One observation from the middle level manager was that the closer someone is to the demand source the greater the perception of strategic competitive value in an action (Participant 1, personal communication, April 12, 2017).

Considering strategy in general terms all of the participants had some experience similar to that described in this study (study participant, personal communication, April 12-20, 2017). At the same time, there responses to what was and was not strategic correlated to their level in the firm and location within their supply chain (study participant, personal communication, April 12-20, 2017). Participant 2 suggested, “Strategy, or what we define as strategic, is reflective of the phases of the business in terms of what we needed to achieve first” (personal communication, April 12-19, 2017). This variable view of strategic is reinforced at a functional level when study participant 549235 stated, “fifty percent of the time we cannot meet exactly what the customer wants” and then again by study participant 549235, “if we are being strategic we are staying within our capabilities, in realistic terms we have to understand ourselves and always present to the customer inside of those capabilities” (personal communication, April 12 and 14, 2017). This difference shows up in the responses to interview question 2. This is important, recall that interview question 2 is reflective of research question 1. Does the introduction of a project manager add strategic value when customer-driven random events occur that require additional flexibility in the supply chain? In response to the addition of strategic value by the PM the definition of strategic was predicated on the local perception of strategic. One top manager

(Participant 2) said, “yes there is strategic value, but what is the cost” while another (Participant 4) responded, “maybe, but not for every situation” (personal communication, April 18 and 19, 2017). The participant with the 50% fail rate on their on-time delivery metric felt that the addition of the PM was definitely of strategic value (Participant 3, personal communication, April 12, 2017).

Systems

With regards to systems, interview question 1 asked participants about their experience with or knowledge of EPR, MRP, ECM systems, and PM approaches to systematic project management. In interview question 2, the participants were queried about their experience with the push-pull supply chain and the decoupling point as part of the supply chain system. With each participant, these questions provided them with a starting point to further discuss the linkages within the supply chain between their present location and the proximal location of the customer or the vendor.

At the top levels of management, the participants were knowledgeable about the ERP, MRP, and CRM systems, although they tended to opt for a dashboard that projects key metrics and the CRM system as opposed to using the ERP or MRP systems (Participants 2 and 4, personal communication, April 18 and 19, 2017). Depending on the supply chain location of the mid-level and lower level managers they would use a combination of either the ERP and MRP systems or the ERP and CRM systems (Participants 1, 3, 5, 6, and 7, personal communication, April 12 and 19, 2017). It should be noted that the organizations for two of the participants had no formal CRM system (study participants, personal communication, April 12 and 19, 2017). One of the unexpected revolutions from the study was the use of informal communications paths

when there was an urgency as opposed to the formal ERP and MRP systems (study participants, personal communication, April 18 and 19, 2017).

With regards to the push-pull supply chain, all of the participants were well versed, articulated knowledgeable, and proficient in working with this system (personal communication, April 12-20, 2017). Additionally, all but one of the participants were familiar with the concept of the decoupling point and how lead-times were used to minimize the uncertainty in its locations (personal communication, April 12-20, 2017). In particular, one of the participants was a master scheduler and managed data on both sides of the decoupling point (Participant 3, personal communication, April 12, 2017).

There were several areas of interests that were generated in the discussions with the participants. First, from a systems perspective all of the participants expressed the importance of accurate sales forecasts (future demand perspective), sale operations data (historic sales data that drives a sales plan), and MRP data (representing the real-time disposition of the supply) (personal communication, April 12-20, 2017). Participants 7 is a vendor manager and discussed how this connected system helps him manage the expectations of suppliers (Participant 7, personal communication, April 12-20, 2017). Participant 7 stated “the MRP system provides an internal perspective that accounts for customer demand and also allows for a common as well as stable platform for communicating with vendors” (Participant 7, personal communication, April 20, 2017). This is similar to how customers are managed on the demand side (Participant 6, personal communication, April 19, 2017).

The second area of interest revolved around the lack of flexibility in ERP, MRP, and CRM systems with regards to unforeseen or unplanned events. In several organizations, they would use relational systems, personal interactions, and emails to accommodate these events and

them when the event has dissipated they would move back into the formal system (Participants 3, 5, and 6, personal communication, April 12, 14, and 19, 2017). There was a conscience among the participants that this type of informal interaction is temporary and goal driven, thus would benefit from project management interaction (Participant 2, 4, and 5, personal communication, April 12, 18-19, 2017). A statement made by Participant 5 capsulized the overall consensus:

> For this manual process to be anything but temporary is unacceptable…we need, no must, have consistency and predictability up and down the supply chain in order to be successful… the addition of a project manager would defiantly add value, however I am not convinced that it is the most cost effective solution. (Participant 5, personal communication, April 12, 2017)

While it is evident these systems (ERP, MRP, and CRM) allow the firms to develop stable and predictable supply chains, it is evident from the participant responses that flexibility is still valued when exceptions to standard processes are requested (personal communication, April 12-20, 2017).

Processes

Interview question 1 asked that participants consider their experience with the order fulfillment process, the lead-time process, and supply chain planning process. Interview questions 3, 4, and 5 focused on the expedite process. Lastly interview question 6 asked the participants to consider the engagement of a project manager in these processes.

For the most part all of the participants had experience with each of these processes (study participants, personal communication, April 12-20, 2017). However the perspective of each participant was different and dependent on their individual location within the supply chain (study participants, personal communication, April 12-20, 2017). The master planners'

perspective of the expediting process is different from that of the product manager (study participants, personal communication, April 12-20, 2017). For example, when Participant 7 is engaged in the expedite process they, "work with supply side vendors to first maintain currently scheduled materials to support the stability of the production process, and secondly inquire with vendors as to their ability to expedite materials needed to support the expedite request" (Participant 7, personal communication, April 20, 2017). While Participant 5's role is to "coordinate with midlevel managers to include the operations manager, the supply chain manager to insure that all systems are synchronized in an effort to maintain the stability of the supply while attempting to support the expedite request" (Participant 5, personal communication, April 14, 2017). Simultaneously, Participant 6 is "Working with the customer to understand their needs and why they need the exception" (Participant 6, personal communication, April 19, 2017). In short, the perspective of the top level manager on these processes is about managing expectations and controlling costs, at the same time the mid-level manager seeks to maintain stability as well as balance in the systems of the firm, while the lower level manager works with in these processes to optimize the results (study participants, personal communication, April 12-20, 2017).

According to one participant the order fulfillment process began when the PO was received and closed when the corresponding sales order was shipped to the customer (Participant 1, personal communication, April 12, 2017). At the same time the order fulfillment process for another participant began and ended when their portion of the process was complete (Participant 5, personal communication, April 14, 2017). With regards to the expedited process one of the participants explained how his organization is customer centric and employees are encouraged to work quickly to fulfill the expedited request (Participant 6, personal communication, April 19,

2017). As such the expediting process is addressed in the email system and not the ERP system (Participant 6, personal communication, April 19, 2017). They did clarify the expedite email process runs in parallel to the ERP system and that the ERP is frequently updated (Participant 6, personal communication, April 19, 2017).

Lastly, the participants were asked to consider the intervention of a project manager into the customer order expediting process. Interview questions 3-5 related to research question 2A. Does a project manager have the ability to add strategic value by extending the voice of the customer (VOC) deeper into the organization while effectively integrating the needs of both the customer and the supply chain in support of the strategic objectives of the firm? Interview question 6, will the engagement of a project manager in the management of the temporary relocation of the decoupling point minimize the potential for the bullwhip effect in the supply chain while meeting the customers' random and unique project need? This question reflected directly on research question 2B. As previously stated, the majority of the participants agreed the PM has the skills and knowledge to approach the study problem strategically, to represent the customer deep into the organizations, and to manage the temporary relocation of the decoupling point so as to minimize the turbulence (study participants, personal communication, April 12-20, 2017). There was concern from the majority of the participants about the need for the role based on their individual experiences (study participants, personal communication, April 12-20, 2017). Participants 2 and 4 were concerned about the long term value of the PM in this role versus the long term cost of the PM if they were dedicated only to this role (personal communication, April 18-19, 2017). Participants 1 and 5 saw the value in using the PM in this role for the short term, but also expressed the long term solution should be process oriented (Participants 1 and 5, personal communication, April 12, 14, 2017). Finally, Participants 3 and 6 both expressed the

PM would bring needed skills that would benefit them in managing the supply chain, the customer, and customer requested exceptions (Participants 3 and 6, personal communication, April 12, 19, 2017).

PM and the Decoupling Point

The problem that this study has attempted to address is the removal or minimization of turbulence caused within the supply chain by the temporary relocation of the decoupling point which is a strategic response to a random customer-driven event (Kim et al., 2012). To address this problem, firms need a mechanism that will support the customer as well as the firm when these random events occur (Kim et al., 2012). The purpose of the mechanism is to provide temporary flexibility in the supply chain, allowing the re-positioning of the decoupling point; the project manager is ideal for this role. As discussed with the study participants, this mechanism is the order expediting process. The interview questions are ultimately asking the study participants to consider the introductions of a project manager and the application of project management skills to temporarily relocate the decoupling point in response to the occurrence of customer-driven random events. The goal is for the PM to be strategic, generate flexibility, represent the customer, and to minimize the turbulence.

What follows is the as-is process for customer expedites as presented by, and discussed with, the participants in the study. If the requested date is inside of the minimum lead-time then the request is rejected (study participants, personal communication, April 12-20, 2017). If the expedite request is rejected then it can then be escalated for evaluation by a manager (study participants, personal communication, April 12-20, 2017). If it is approved, it then advances to a master planner for evaluation and date improvement (study participants, personal communication, April 12-20, 2017). Note that “the master planner is able to manipulate the

location of the decoupling point based on supply input and demand inputs" (Participant 3, personal communication, April 12, 2017). The planner then coordinates with the purchasing agent who coordinates with supplier (study participants, personal communication, April 12-20, 2017). At the same time the planner is working with operation to evaluate production capacity (study participants, personal communication, April 12-20, 2017). In order to adjust the dates or meet the request, the planner may need to engage the sales team to develop swap opportunities or to engage the requesting customer to consider accepting partial fulfillment over a period of time (study participants, personal communication, April 12-20, 2017). Once the supply is in place the planner will improve the dates for the customer (study participants, personal communication, April 12-20, 2017).

The first concern with this process is that it is systems driven and takes on average between 48 and 72 hours to complete (Participants 5 and 3, personal communication, April 12, 2017). Except for the participant that runs this process in email, all of the others use ERP and MRP systems to manage the process (study participants, personal communication, April 12-20, 2017). The second concern is that when time is critical there is motivation to go around the process, which risks causing future shortages for other customers (Participant 6, personal communication, April 19, 2017). The third concern is that no one individual has a clear understanding of the customers' true need or any portion of the process outside their own (Participants 2, 3, 4, and 5, personal communication, April 12-19, 2017). This indicates the need for shared accountability and holistic ownership. As previously stated, the responses from the participants demonstrate their agreement that a project manager has the skills and is capable of address these concerns (study participants, personal communication, April 12-20, 2017).

However, there were several concerns about the practicality of having a project manager in this role (study participants, personal communication, April 12-20, 2017).

There were several reasons for the participants' concerns regarding the appropriateness of applying the skills of a project manager in this fashion. The SCM participants, specifically those at a lower and middle level management were concerned about the frequency of the type of occurrence describe in the study problem (study participants, personal communication, April 12-20, 2017). Participant 3 stated, "although I agree that the PM is capable, I am not sure that the volume of expedites would justify the cost of dedicating a PM in this way" (Participant 3, personal communication, April 12, 2017). The PM participants that were lower and middle level managers appreciated the value that the PM ownership would bring to this process (study participants, personal communication, April 12-20, 2017). At the same time, they thought that this role could be filled as needed by sales engineers or PMs from the business units that manage the product lines (Participants 1 and 6, personal communication, April 19, 2017). The top level managers from both the SCM and the PM professions were in agreement that the concept is correct in proposing that the PM and their skills would be applicable to the problem (study participants, personal communication, April 12-20, 2017). Their position was that the project manager is an expensive asset to the firm (Participants 2 and 4, personal communication, April 18 and 19, 2017). They would prefer to focus the PM on larger strategic issues (Participants 2 and 4, personal communication, April 18 and 19, 2017). They also suggested a hybrid approach that would train someone in the manufacturing or sale operations with the PM skills to manage these types of expedites (proposed in the study) as needed (Participants 2 and 4, personal communication, April 18 and 19, 2017).

This brings the discussion of the finding to the emergent themes. These themes were developed from the mixed feedback given by the participants. The participants' response was consistent between SCM and PM professions, across all management levels, and the multiple SC locations represented by the study participants (study participants, personal communication, April 12-20, 2017). The themes emerged after analyzing the participants' word usage. The common words that the participants used to describe their individual experience with SCM, the decoupling point, the expediting process, and project management was complexity, culture, understanding, and communications (study participants, personal communication, April 12-20, 2017). These four emergent themes cut across all three of the preliminary categories, strategy, systems, and process (study participants, personal communication, April 12-20, 2017). These categories, strategy, systems and processes exist as an approach to extend, share, facilitate, or manage complexity, culture, understanding, and communications.

Emergent Theme 1: Complexity

Gransberg, Shane, Strong, and del Puerto (2013) discussed complexity as the interrelationship between uncertainty and ambiguity. In this study complexity was impactful in multiple locations and observed from multiple perspectives. For example, participants who were closer to the customer experienced complexity differently than those that were further away (study participants, personal communication, April 12-20, 2017). It was not a question of proximity but one of definition. For example, Participant 3 stated, "I work with manufacturing every day, however when I try to work with the procurement of customer service folks it's like they speak another language…we have a lot of moving parts in manufacturing but the variability is greater when you involve customers or vendors" (Participant 3, personal communication, April 12-20, 2017). The definition of complexity for one participant was different from that of another

(study participants, personal communication, April 12-20, 2017). Additionally, the perspective of complexity was different depending on one's level within the organization (study participants, personal communication, April 12-20, 2017). The perspective of the top level manager was much broader than that of the lower level manage whose perspective was much more detailed (study participants, personal communication, April 12-20, 2017). As Participant 4 puts it, "at the top level complexity is caused by the need to deliver predictability in preparation for the potential unknown, while in the ranks complexity is caused by the interaction with the unknown and its demand for our flexibility" (Participant 4, personal communication, April 12-18, 2017).

Some of the complexities that were experienced by the study participants also impact the customers of a firm, and the participants in the supply chain. Participants 5 and 7 both explained the need to manage complexity as they implement their individual vendor strategies (Participants 5 and 7, personal communication, April 14-20, 2017). The complexity is caused by a management requirement to synchronize the vendors system (production and or delivery schedule) with their own supply chain systems (Participants 5 and 7, personal communication, April 14 and 20, 2017). The supply information is only a snapshot in time and ever changing. Participant 3 explained the complexity that must be addressed when generating an accurate master production plan, and then project that plan with confidence to the supply network (Participant 3, personal communication, April 12, 2017). Part of the complexity is because the plan is grounded in disparate information that is located in multiple systems (MRP, Sales Ops Planning, and Sales Forecasts) across multiple organizations (Participant 3, personal communication, April 12, 2017). The supply chain managers are attempting to control or temper complexity when they implement ERP, MRP and CRM systems (Pathak et al., 2007). This study

has attempted to address complexity with the proposal to engage a PM in the process to relocate the decoupling point (Saynisch, 2010a, 2010b).

Emergent Theme 2: Culture

The second emergent theme is culture. Across the study population culture was consistently mentioned to describe the motivations for certain actions, such as their interaction with the customer, internal units of the organization, or even vendors (study participants, personal communication, April 12-20, 2017). Deem, Barnes, Huizenga, Segal, and Preziosi (2010) suggested that culture is shared beliefs, values, and symbols. A strong example of culture is the organization that has an ERP and MRP system yet still manages it expedite process via emails and personal interactions (Participant 6, personal communication, April 19, 2017). When the participant was asked about the practice they responded, "even though we are a large player in our industry our portion of the company has a long history building personal relationships that allow us to address issues more quickly via email than through the ERP system" (Participant 6, personal communication, April 19, 2017). At the same time the organization has an older work force, and culturally, as well as historically their interactions have been relational (Participant 6, personal communication, April 19, 2017). The participant did clarify the expedite email process runs in parallel to the ERP system and that the ERP is frequently updated (Participant 6, personal communication, April 19, 2017).

To this point consider the study by Haque and Islam (2013) on effective SCM and the act of boundary spanning on customer satisfactions (Haque & Islam, 2013). They point out the effectiveness of inter-organizational boundary spanning is dependent on the existence of, or the establishment of a relationship (Haque & Islam, 2013). Several other participants point out, even though most organizations have an SCM system in place as a formal platform (ERP, MRP, and

CRM), there is also an informal channel that crosses organization boundaries (Participant 6, personal communication, April 19, 2017). The frequency of the organization to engage using this informal channel is dependent on the culture of the organization (Haque & Islam, 2013). In the early years of CRM customers were hesitant to engage because of security and lack or training (Haque & Islam, 2013). More recently CRM systems or CRM-like products are becoming more available (Haque & Islam, 2013). The feedback from the participants in conjunction with the example of acceptance by organizations of CRM systems would indicate that in addition to formal processes and systems, interpersonal relationships as well as the culture of the organization are equally important (study participants, personal communication, April 12-20, 2017).

Emergent Theme 3: Understanding

The third emergent theme is understanding. Participant 2 suggests, "it is important to understand the connectivity within the supply chain in order to manage it" (Participant 2, personal communication, April 19, 2017). Specifically, the 2nd, 3rd, and 4th order effects of the SCM decisions that are made. Participant 3 explains the MRP system provides them with the materials information they combined with sales data to create an understanding and to then generate the master plan (Participant 3, personal communication, April 12, 2017). Participant 6 points out that CRM allows the firm develop a more intimate understanding of their customer (Participant 6, personal communication, April 19, 2017). Further, it is equally important for Participant 7 to develop a similarly understanding of the vendor organization so he may also leverage the relationship (Participant 7, personal communication, April 20, 2017). "Developing these relationships includes understanding the limitations and capabilities of both customers and vendors" (Participant 4, personal communication, April 18, 2017). In an investigation of IT

program goals and conflict management, Jiang, Chang, Chen, Wang, and Klein (2014) explored the value of shared understanding. The value of shared understanding is it allows one to more easily develop the relationships that serve as an informal support network that runs parallel to more formal process and systems networks (Jiang et al., 2014). In this study, the suggested project manager would be responsible to engage in shared understanding when working with the expedite team to minimize the turbulence caused by the temporary relocation of the decoupling point.

Emergent Theme 4: Communications

The fourth and final emergent theme is communications. Meier, Ben, and Schuppan (2013) discussed the importance of communication when there is resistance to change, for example in the temporary relocation of the decoupling point in response to unplanned demand. Participant 5 asserts "the connectivity within the supply chain requires the facilitation and free flow of communications in order to be successful" (Participant 5, personal communication, April 12, 2017). Additionally, the supply chain has both formal (systems driven) communications and informal (relational) communications. Further, there is a human element to enterprise engagement that moves parallel to the formal systems (ERP) of the firm (Participant 4, personal communication, April 18, 2017). Participant 6 also points out the minimum lead-times are communicated both formally in the system and informally (e.g., in person, on the phone, in email or text, and push communications like a newsletter or product update; Participant 6, personal communication, April 19, 2017).

Summary of Emergent Themes and Findings.

The emergent themes of complexity, culture, understanding, and communications had their genesis in the mixed feedback received from the study participants. The theme began to

emerge after analyzing the participants' word usage. The common words the participants used to describe their individual experience with SCM, the decoupling point, the expediting process, and project management were complexity, culture, understanding, and communications (personal communication, April 20, 2017). These four emergent themes cut across all three categories, strategy, systems, and process. These categories, strategy, systems and processes exist as an approach to extend, share, facilitate, or manage complexity, culture, understanding, and communications.

The research questions for this study were the following. First, does the introduction of a project manager add strategic value when customer-driven random events occur that require additional flexibility in the supply chain? Secondly, does a project manager have the ability to add strategic value by extending the voice of the customer (VOC) deeper into the organization while effectively integrating the needs of both the customer and the supply chain in support of the strategic objectives of the firm? Lastly, will the engagement of a project manager in the management of the temporary relocation of the decoupling point minimize the potential for the bullwhip effect in the supply chain while meeting the customers' random and unique project need?

In agreement with the views expressed by the participants the findings of this study suggest the PM has the skills and knowledge to approach the study problem strategically, to represent the voice of the customer deep into the organizations, and to manage the temporary relocation of the decoupling point so as to minimize the turbulence (personal communication, April 20, 2017). The actual deployment of a PM in this situation should be on a case-by-case basis (personal communication, April 20, 2017). Further, the engagement of the PM would be dictated by the complexities surrounding the event, the culture of the organization, the ability to

understand the motivations as well as the objectives, as well as the ability to communicate with all of participating and partners involved in the endeavor (personal communication, April 20, 2017). .

Applications to Professional Practice

In this study research question 1 asked, does the introduction of a project manager add strategic value when customer-driven random events occur that require additional flexibility in the supply chain? Then research question 2A asked, does a project manager have the ability to add strategic value by extending the voice of the customer (VOC) deeper into the organization while effectively integrating the needs of both the customer and the supply chain in support of the strategic objectives of the firm? Lastly, research question 2B asked, will the engagement of a project manager in the management of the temporary relocation of the decoupling point minimize the potential for the bullwhip effect in the supply chain while meeting the customers' random and unique project need?

Beyond this study, the findings are applicable to the broader business universe. First, the study does find that project managers are capable of addressing the study problem. The temporary relocation of the decoupling coupling when an unplanned demand event occurs (personal communication, April 20, 2017). However, this study does not recommend permanently engaging a project manager to address this problem (personal communication, April 20, 2017). As an alternative, it would be of more value for the firm to select a hybrid solution that addresses these issues on a case-by-case basis while all involved are performing other tasks (personal communication, April 20, 2017).

The findings of this study also demonstrates how organizations struggle and evolve their processes differently in a competitive environment. Findings also highlight the elemental themes

that many firms have in common, study, understanding, culture, complexity, and communications (study participants, personal communication, April 12-20, 2017). These themes apply vertical as well as horizontally across the organization (study participants, personal communication, April 12-20, 2017). Further it becomes apparent that an organization must do more than just develop strategies, build management systems, and create processes in order to be successful (Aldin & de Cesare, 2011; Bento et al., 2013; Hult, 2011; Poblador, 2014). At a foundational level they should first consider the four emergent themes form the study, understanding, culture, complexity, and communications (study participants, personal communication, April 12-20, 2017). Organizations' should seek to understand themselves, their customers, and their vendors in the context of culture, complexity, and communications (London & Sessa, 2007; Za, Spagnoletti, & North-Samardzic, 2014). The understanding of these emergent themes will allow the organization to develop more effective strategies, build more effective systems, and create more effective processes. By giving attention to these emergent theme the organizations are able to take a systems approach that integrates both the internal and external understanding of these emergent themes into strategic solutions that holistically provide the stability needed to minimize costs while also allowing enough flexibility to address exceptions as a system (Ahsan et al., 2013; Kerzner, 2003; Poblador, 2014).

Regarding project management as a profession, project managers need to continually evolve their approach in order to accommodate the demands of the integrated supply chain system, support the need for greater coordination, and provide an increased focus on improving their interpersonal skills in the project environment (Ahsan et al., 2013; Kerzner, 2003; Poblador, 2014). This project management evolution is driven by the need for business to remain

competitive thus reflecting the demand for firms to manage increasing complexity and continuous change (Saynisch, 2010a, 2010b).

Historically project management methodology has engaged projects within the supply chain systems with a linear approach or the project is hampered by linear thinking (Ahsan et al., 2013; Dansong & Wenxue, 2005). This is no longer acceptable, as modern supply chains are not linear they have evolved into complex adaptive systems (Dansong & Wenxue, 2005; Jaehne et al., 2009). The project managers in these complex environments will find themselves leading a project to address these uncertain and complex challenges (Marchi et al., 2014; Saynisch, 2010a). In response to the ever-present threat of uncertainty and complexity, project managers should be prepared to take a nonlinear approach (Marchi et al., 2014; Saynisch, 2010b).

In order to successfully deliver a project in an environment of increased complexity and uncertainty project managers must broaden their knowledge, hone their skills, and improve their interpersonal interactions so as to allow them to influence stakeholders (Ortiz-Marcos et al., 2013). These softer competencies have allowed the project manager to integrate personal relationships into project management so as to build trust (Kaminsky, 2012; Ortiz-Marcos et al., 2013). The project managers' ability to apply their emotional intelligence (soft skills) to a project situation has been found by several studies to be more important than the application of their hard skills (Clarke, 2010; El-Sabaa, 2001; Galvin et al., 2014). In short, project managers must also consider the emergent themes from this study (e.g., understanding, complexity, culture, and communications) and integrate the results of this consideration so they can execute their assignments in a non-linier solutions.

Once again this study does find that project managers are capable of addressing the study problem (personal communication, April 12-20, 2017). Specific to the temporary relocation of

the decoupling coupling when an unplanned demand event occurs, this study does not recommend engaging a project manager to address this problem (personal communication, April 12-20, 2017). As an alternative, it may be of more value for the firm to train supply chain participants that engage in the sales order expedite process in the application of PM process groups and knowledge areas (Andreev & Panayotova, 2013; PMBOK, 2013). They can then address these issues on a case-by-case basis while performing other tasks.

This is a hybrid approach, which was suggested by the study participants (personal communication, April 12-20, 2017). Based on the consensus from the study participants that the project manager is capable and qualified, in that short term organizations should be willing to deploy project managers to manage the temporary relocation of the decoupling point (personal communication, April 12-20, 2017). At the same time organizations armed with the understanding they glean from their analysis of the complexities in the environments, the culture, appropriate blend communications (the best ratio of formal to informal), and with the assistance of the project manager should evolve their strategies, processes, and systems to have the flexibility to accommodate these types of exceptions requests (Dansong & Wenxue, 2005; Marchi et al., 2014; Pathak et al., 2007). In the long-term the more adaptable strategies, processes, and systems developed as an adaptive system, would allow the organization to manage the exceptions without the project manager (Dansong & Wenxue, 2005; Marchi et al., 2014; Pathak et al., 2007). Thus allowing them to reassign the project manager to a new project. This hybrid approach also acknowledges the concerns from the study participants regarding the appropriateness of having the project manager in this role as well as the cost benefit of having the project manager in this role (personal communication, April 12-20, 2017).

Consider this hybrid approach from a biblical perspective. In the book of Nehemiah, Nehemiah is tasked to rebuild the walls and gates of Jerusalem (Nehemiah. 2:4-12 NIV). During this process, Nehemiah carried out the basic tasks of a project manager, initiating the project, planning the project, executing the project, monitoring and controlling the project, and closing the project (PMBOK, 2013).

Nehemiah initiates the project when he prays to God, engages the King with a sponsorship request and seeking out the resources for rebuild the fortifications of Jerusalem (Nehemiah. 1:1-11, 2:5-10 NIV). In the case of this study the management of the decoupling point is initiated when the customer request the exception. This acceptance and delivery of the requested exception would have to provide some strategic value to all parties much like the new walls of Jerusalem would provide.

Nehemiah then plans the project and begins to assembler the project team that will rebuild the fortifications of Jerusalem (Nehemiah. 2:15-18 NIV). The project manager that is assigned to manage the temporary relocation of the decoupling point would need to gather information to develop a plan of action, secure resources to support the temporary relocation, and engage as well as in list additional team members. Just as Nehemiah develops his project team from the desperate tribes, the project manager will gather and assemble his cross-functional team from inside and outside the organization (Nehemiah. 2:15-19 NIV).

Nehemiah then executes the project and begins to assemble fortifications of Jerusalem (Nehemiah. 3:3 NIV). The project manager must also move into the execution phase of the project. In the next phase Nehemiah focuses on monitoring and controlling the project to insure that the fortifications of Jerusalem can be rebuilt in the most efficient and effective way possible (Nehemiah. 3:4-6:19 NIV). During the monitoring and controlling phase Nehemiah task

organizes his team so that are able to maximize their efforts in rebuilding the fortifications of Jerusalem, simultaneously he must also adapt to a changing environment as these are some in the community who are opposed to the project (Nehemiah. 3:3-6:19 NIV). In this case there are cultural as well as competitive differences with the opposition that Nehemiah must contend with (Nehemiah. 3:4-6:19 NIV). Just as Nehemiah has to effectively cross the boundary of culture and differing strategic goals, in an effort to manage the temporary relocation of the decoupling point the project manager must also engage on a human level to enlist supporters and foes to assist in the completion of the project (Marchi et al., 2014; Saynisch, 2010b).

In the final project phase Nehemiah returns the completed walls and gates to the community (Nehemiah. 7:1-3NIV). Over the course of the project he trained the community in the maintenance and defense of the wall. Further he has also trained a new leader to accept and manage the completed walls and gates (Nehemiah. 2:15-7:3 NIV). In the previously described hybrid process for managing the temporary relocation of the decoupling point the project manager in was responsible to not only successfully complete the project, but to also understand the processes that are required to manage the move of the decoupling point (personal communication, April 12-20, 2017). Further they are tasked to improve the process, train all of the process participants, and then return the completed project to the appropriate owner (personal communication, April 12-20, 2017).

During the processes project phases of planning, execution, monitoring and controlling, as well as closing the project both Nehemiah and the project manager share similar tasks. They will seek to understand the complexity associated with the project, the culture that will impact and be impacted by the project, and lastly how to best communicate with all of the desperate groups that surround the project (Nehemiah. 2:15-7:3 NIV).

This study considered the introduction of a project manager to promote a collaborative approach to conducting business. The purpose of the collaboration is to work creatively at making the business more competitive. First consider the phases of project management as presented in Nehemiah along with the creative collaboration that is project management in the context of the emergent theme, complexity, culture, understanding, and communications. During the project phases of planning, execution, monitoring and controlling, as well as closing the project both Nehemiah and the project manager share similar tasks (PMBOK, 2013). They will seek to understand the complexity associated with the project, the culture that will impact and be impacted by the project, then lastly how to best communicate with all of the desperate groups that surround the project (Nehemiah. 2:15-7:3 NIV).

Everyday businesses, as well as individuals, are faced with complexity that must be addressed. Culture is human and is representative of mans' creativity capabilities. Understanding provides man with the fuel for his creativity. Lastly, communications which allow man to share in understanding so that he can apply collaboratively creativity to complex opportunities.

Recommendations for Action

In this study research question 1 asked, does the introduction of a project manager add strategic value when customer-driven random events occur that require additional flexibility in the supply chain? Then research question 2A asked, does a project manager have the ability to add strategic value by extending the voice of the customer (VOC) deeper into the organization while effectively integrating the needs of both the customer and the supply chain in support of the strategic objectives of the firm? Lastly, research question 2B asked, will the engagement of a project manager in the management of the temporary relocation of the decoupling point

minimize the potential for the bullwhip effect in the supply chain while meeting the customers' random and unique project need?

The findings of the study support capabilities of a project manager to perform these tasks usefully. Further the findings do not advocate that a project manager should perform these tasks on a permanent basis. Given these findings the next logical step would be to train supply chain participants that engage in the sales order expedite process in the in the application of PM process groups and knowledge areas (PMBOK, 2013). With the proper onboarding and training this could be an effective alternative to a dedicated project manager. As an alternative, it would be of more value for the firm to select a hybrid solution that addresses these issues on a case-by-case basis while all involved are performing other tasks (personal communication, April 20, 2017).

With regards to the emergent themes, organizations and project managers should consider integrating the assessment of complexity, culture, and communications in to their decision making and problem solving processes. The integration of these perspectives will provide a foundational understanding of a given organization, its capabilities, its people, and its challenges. It is this understanding that will lease organizations and project managers to develop and support better strategies, to create and manage more agile and healthier processes, as well as build to build systems that are more flexible and robust.

Regarding the appropriate audience for this study and its findings, they are tailored for the project management and supply chain communities. This study is equally applicable for operations managers and strategist. Organizations that wish to operationalize the findings should also expand the focus audience to HR and IT professional as the each can relate to at least one of the emergent themes. The dissemination of the findings in the study should be presented at

reginal project management, operations management and supply chain conferences that are sponsored by the Project Management Institute (PMI), the American Management Association (AMA), or the Association for Supply Chain Management (APICS). Additionally, each of these organizations have journals, blogs, and community forums that would find value in their study and its results.

Initial exposure of this study beyond the publication of the dissertation should occur at a local level. Management symposiums at local colleges and universities or as a guest speaker in a class at a local business school. Further, the finding of this study would also be applicable in business support meetings sponsored by a local SCORE offices (Small Business Administration / SBA) or local University Extension offices.

Recommendations for Further Study

This study does find that project managers are capable of addressing the study problem. The temporary relocation of the decoupling coupling when an unplanned demand event occurs (personal communication, April 20, 2017). However, this study does not recommend permanently engaging a project manager to address this problem (personal communication, April 20, 2017). As an alternative, it would be of more value for the firm to select a hybrid solution that addresses these issues on a case-by-case basis while all involved are performing other tasks (personal communication, April 20, 2017). Thus, the findings of this study were mixed and do in deed warrant additional consideration in academic and professional settings. As such, this researcher recommends two tracks of potential future research. Each of these recommendations builds on the contributions of this study.

The first track of study is to evaluate the applications of project management skill and knowledge by a non-project manager in the temporary relocation of the decoupling point. There

is still a gap in the literature with regards to the application of project management skills. At present, there is only a hand full of articles that consider this topic.

The second track of investigations would consider the customer order expediting process and the differences in the agility of the formal ERP systems with that of the informal relational systems. There was evidence from the participants in this study that suggest the application of the informal system occurs with a higher than expected frequency. This would suggest that some firms are using a hybrid system that combines the ERP and the relational system.

Reflections

Completing this research study has been a challenging experience. The major contributor to the challenge was the limiting the influence of personal bias and preconceived ideas about the research topic. In response, the researcher applied a structured interview process that provided contextual support for the individual participants' perspective, thus reinforcing the reliability of the interview data. The contextual foundation also serves to ground the researcher and allow them to be reflexive. The interactions with the study participants were refreshing and insightful. Their perspective gave depth, texture, and color the study. It was insightful because they were presenting the practical application of the concepts discussed in the literature review. The key learning point for the searcher was how to be considerate of the context of the information that is being analyzed.

We are encouraged to join in the redemptive process as an endeavor to restore the relationship between God and man. This restoration is only possible through Christ and with grace of God. Our role in the process is to be the kind spokesperson that unselfishly reflects the gifts that God has given on to others.

Summary and Study Conclusions

The purpose of this qualitative hermeneutical phenomenological study was to investigate, understand, and describe the value of engaging a project manager to support a customer-driven project that creates a random supply chain demand event. Specifically, such an event would require the temporary re-positioning of the decoupling point between the supply push and demand pull within the supply chain. In response to this problem the investigation focused on three questions (one primary and two secondary). The primary question: Does the introduction of a project manager add strategic value when customer-driven random events occur that require additional flexibility in the supply chain? The two sub-questions: First, does a project manager have the ability to add strategic value by extending the voice of the customer (VOC) deeper into the organization while effectively integrating the needs of both the customer and the supply chain in support of the strategic objectives of the firm? Secondly, will the engagement of a project manager in the management of the temporary relocation of the decoupling point minimize the potential for the bullwhip effect in the supply chain while meeting the customers' random and unique project need?

Interviews were conducted with supply chain and project management professionals that have lived experiences with the phenomenon. The interview is sub-divided into three sequential focuses (history, experience, and meaning) that provide insight into the participants' experience. Interview questions that reflect the first focal element, history, solicit contextual information about the individual participants and the setting that encompasses both the phenomenon and themselves. The second focal element is concerned with the individual participant's interaction with the phenomenon, as such these interview questions seeks to collect data that allows the researcher to see a verbal portrait of the participants experience (Seidman, 2013; Stake, 2010).

Finally, the remaining interview questions, the third focal element, prompts the individual participants to reflect and articulate the meaning of their lived experiences with the phenomenon.

Lastly, the findings of this study suggest the PM has the skills and knowledge to approach the study problem strategically, to represent the voice of the customer deep into the organizations, and to manage the temporary relocation of the decoupling point so as to minimize the turbulence. The actual deployment of a PM in this situation should be on a case by case basis. Further, the engagement of the PM would be dictated by the complexities surrounding the event, the culture of the organization, the ability to understand the motivations as well as the objective, and the ability to communicate with the all of participating and partners involved in the endeavor.

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Appendix A: Supply Chain Management Interview Questions

SCM Interview Instructions

The interview questions are administered in a conversational format. As the interview progresses the exact wording of the questions will vary from one participant to the next base on the participant's profession (SCM or PM) and their level within the organization (Executive, Director, Manager, Consultant). That said it is important to maintain the integrity of the study and the essence of each question. Further the interview questions are organized in a logical sequence that it intended to provide a historical foundation for the participants experience, prompt the participant to describe their experience, and allow the participant to provide feedback that is grounded in their experiential perspective regarding the research questions. However the interviewer should be prepared to present the questions in a sequence that is most appropriate to the participant being interviewed. For example an out of sequence question may be logical, in order to maintain flow of the interview, given a participants responses to previous questions. Additionally the interviewer must also consider a participants time constraints as well as any unforeseen technology issue when conducting the interview. The key is for the interviewer to employ the interview questions as a guide for establishing a past, present, and future perspective from each participant regarding the focus of the study while maintaining the intention and essence of the interview questions.

Supply Chain Management

1) What is the professional background of the participants (exposure to supply chain management and project management?
    a) Please describe how you came to be a supply chain professional.

b) How would you describe your supply chain management experience? (Note: in general and regarding the items listed below)

i) In your supply chain experience, how would you describe your interaction with supply chain management strategy?

(1) Have you engaged in the creation of SCM strategy?

(a) If so what was your experience?

(2) Please describe your role (and experience) implementing SCM strategy.

ii) Describe your experience with supply chain information management and sharing.

(1) From your perspective, what is the role of the enterprise systems in the supply chain?

(a) Please describe your supply chain interaction with an enterprise system.

(2) From your perspective, what is the role of the material resource planning (MRP) system in the supply chain?

(a) Please describe your supply chain interaction with a material resource planning (MRP) system.

(3) Please describe from your perspective the importance of lead-time (or fulfillment) management processes and systems.

(a) How is minimum lead-time defined and set?

(b) Describe the factors that influence the need for lead-time changes or flexibility.

(4) Describe your experience with sales order management processes and systems.

(a) Will you elaborate on the demand fulfillment requirement (customer required delivery date)?

(b) Will you elaborate on the supply delivery (fulfillment) commitment (minimum lead-time or greater)?

(c) Please describe your experience with the commitment date change (fulfillment expedite) request process or system.

(5) Describe your experience with customer relationship management (CRM) systems and their value in the supply chain.

iii) Describe your perspective of vendor management and the role of vendor management within the supply chain.

(1) How would you describe vendor strategy and its connection to the business or competitive strategy?

(2) Describe vendor engagement as a function of vendor management.

(3) As part of vendor engagement, describe the communications process.

iv) Describe your experience with resource forecasting, planning, and scheduling.

v) Describe your experience with demand forecasting, planning, and scheduling.

vi) Describe your experience with customer management and support.

(1) How does customer management relate to supply chain management and project management?

(2) How does customer management relate to SCM, business, and the competitive strategy of a firm?

vii) Describe your experience with project management.

(1) Based on your experience, what is your understanding of (perspective of or position regarding) project management and the role of project managers?

(2) Based on your experience, what is your understanding of (perspective of or position regarding) a quality project, a change project, and a voice of the customer (VOC) project?

(3) How would you describe your experience with project management techniques and tools?

(a) Based on your experience, what is your understanding of (perspective of or position regarding) PM Process Groups (Initiating, Planning, Executing, Monitoring / Controlling, and Closing a Project)?

(b) Based on your experience, what is your understanding of (perspective of or position regarding) PM Knowledge Areas (Integration, Scope, Cost, Quality, Human Resource, Communications, Risk, Procurement, and Stakeholder Management)?

(c) Based on your experience, what is your understanding of (perspective of or position regarding) how PM Process Groups interact with PM Knowledge Areas?

(i) How would you describe the actions that occur as the individual elements of the PM Process Groups interact with PM Knowledge Areas?

(ii) What is your experience with the actions (47 actions) that occur at this intersection?

viii) How would you describe interaction (positive or negative) of customer management, supply chain management, and project management?

ix) Additionally, how would you describe how they (customer management, supply chain management, and project management) cumulatively support the execution of the overall strategy (both business and competitive) of the firm?

2) A supply chain that only produces a finished good once there is demand from a customer pushes supply in the form of raw materials, sub-assemblies, and work in process towards finished goods and the customer. At the same time, customers create demand in the supply chain that pulls the work in process and finished goods through the production and distribution network. Academically speaking, the point of interaction where the supply push meets the demand pull is known as the decoupling point.

a) Based on your experience, how would you describe this interaction between the supply push and the demand pull? (Note: in general and in relation to the items below)

i) How stable is this interaction?

(1) Describe the elements that make this interaction stable.

(2) Describe the elements that make this interaction unstable.

ii) Regarding the decoupling, how predictable is its location within the supply chain?

(1) Describe the elements that make the location of the decoupling point predictable.

(2) Describe the elements that make the location of the decoupling point unpredictable.

iii) Describe how the predictability of the decoupling point may or may not be related to the stability of the interaction between the supply push and the demand pull.

iv) In general terms and from your experience, describe the risks and reward of a temporary relocation of a stable and predictable decoupling point.

(1) How would you define the risk and reward if the decoupling point were temporarily relocated up the supply chain (closer to suppliers and further from the customer)?

(2) How would you define the risk and reward if the decoupling point were temporarily relocated down the supply chain (further from suppliers and closer to the customer)?

3) A Customer has contacted your firm and requested a non-standard lead-time for the fulfillment (an order fulfillment inside the standard quoted lead-time) of all of the products listed on a series of customer purchase orders that relate to a specific customer project.

a) Historically speaking and given your experience, how would you address this request?

i) Describe the motivation for quoting standard lead-time and declining the request to expedite.

(1) Describe the benefits of this decision

(2) Describe the risks of this decision.

ii) Describe the motivation for accepting the expedite request and making the commitment to fulfill the order inside of the standard quoted lead-time.

(1) Describe the benefits of this decision.

(2) Describe the risks of this decision.

4) The management at your firm has deemed the fulfillment of the customer's purchase orders and the requested expedite of the commitment (fulfillment) date to be of strategic importance to your firm as well as to the customers.

a) Based on your experience and given the risk to the stability of the supply chain, how do you plan to meet the customer's request to have the fulfillment of their order inside the standard quoted lead-time?
    i) Describe your plan.
        (1) Describe the, who, what, when, and where of your plan.
        (2) Describe the how of your plan.
    ii) Describe the process of executing your plan.
        (1) How would you describe the initiating, planning, executing, monitoring / controlling, and closing processes within your plan?
        (2) How would you describe the management of integration, scope, cost, quality, human resource, communications, risk, procurement, and stakeholders within your plan?

5) Given that the customer order expedite is of strategic value, how is the new fulfilment plan executed to guarantee that the new commitment dates are met?
    a) As part of the plan, who is responsible for its successful execution?
        i) Is it an individual, a dedicated group or team, or an assemblage of disparate individuals?
        ii) Is it the customer, the sales person, a customer service representative, the business unit product or marketing manager, or an executive manager?
        iii) Is it the supply chain manager, the production manager, the vendor manager (purchasing agent), the scheduler, or the demand planner?
    b) Given your experience, in this scenario, how would you describe the role and the interactions of the party that is responsible for the successful execution of the plan?

i) Are those individuals dedicated to the management of this plan from its inception to its closure, or is the execution of this plan in addition to their normal daily responsibilities?

ii) What skills will those individuals employ to manage the successful execution of the plan?

   (1) How would you describe the individual skills requirement (maybe: initiating, planning, executing, monitoring / controlling, and closing)?

   (2) How would you describe the management skills requirement (maybe: integration, scope, cost, quality, human resource, communications, risk, procurement, and stakeholder)?

iii) Who will those individuals work with as a partner or a stakeholder in the execution of the plan?

   (1) Will those individuals engage the customer, the sales person, a customer service representative, the business unit product or marketing manager, or an executive management?

   (2) Will those individuals engage the supply chain manager, the production manager, the vendor manager (purchasing agent), the vendor, the scheduler, or the demand planner?

iv) Please describe how the party that is responsible for the successful execution of the plan will directly and mutually support the strategies of both the firm and the customer.

6) Given your experience, in this scenario, describe how the responsible owner of the plan's successful executions will manage the expedited fulfillment of the customer order in a way that minimizes the turbulence that this action causes in the supply.
    a) How will those individuals employ initiating, planning, executing, monitoring / controlling, and closing processes to deliver successful execution of the plan?
    b) Describe how those individuals will manage the integration, scope, cost, quality, human resource, communications, risk, procurement, and stakeholders required for the successful execution of the plan?

Appendix B: Project Management Interview Questions

PM Interview Instructions

The interview questions are administered in a conversational format. As the interview progresses the exact wording of the questions will vary from one participant to the next base on the participant's profession (SCM or PM) and their level within the organization (Executive, Director, Manager, Consultant). That said it is important to maintain the integrity of the study and the essence of each question. Further the interview questions are organized in a logical sequence that it intended to provide a historical foundation for the participants experience, prompt the participant to describe their experience, and allow the participant to provide feedback that is grounded in their experiential perspective regarding the research questions. However, the interviewer should be prepared to present the questions in a sequence that is most appropriate to the participant being interviewed. For example an out of sequence question may be logical, in order to maintain flow of the interview, given a participants responses to previous questions. Additionally the interviewer must also consider a participants time constraints as well as any unforeseen technology issue when conducting the interview. The key is for the interviewer to employ the interview questions as a guide for establishing a past, present, and future perspective from each participant regarding the focus of the study while maintaining the intention and essence of the interview questions.

Project Management

1) What is the professional background of the participants (exposure to project management and supply chain management)?
    a) Please describe how you came to be a project management professional.

b) How would you describe your project management experience? (Note: in general and regarding the items listed below)

   i) In your project management experience, how would you describe your interaction with supply chain management strategy?

      (1) Have you engaged in the creation of SCM strategy?

         (a) If so, what was your experience?

      (2) Please describe your role (and experience) implementing SCM strategy.

   ii) Describe your experience with supply chain information management and sharing.

      (1) From your perspective, what is the role of the enterprise systems in the supply chain?

         (a) Please describe your project management interaction with an enterprise system.

      (2) From your perspective, what is the role of the material resource planning (MRP) system in the supply chain?

         (a) Please describe your project management interaction with a material resource planning (MRP) system.

      (3) Please describe from your perspective the importance of lead-time (or fulfillment) management processes and systems.

         (a) How is minimum lead-time defined and set?

         (b) Describe the factors that influence the need for lead-time changes or flexibility.

      (4) Describe your experience with sales order management processes and systems.

(a) Will you elaborate on the demand fulfillment requirement (customer required delivery date)?

(b) Will you elaborate on the supply delivery (fulfillment) commitment (minimum lead-time or greater)?

(c) Please describe your experience with the commitment date change (fulfillment expedite) request process or system.

(5) Describe your experience with customer relationship management (CRM) systems and their value in the supply chain.

iii) Describe your perspective of vendor management and the role of vendor management within the supply chain.

(1) How would you describe vendor strategy and its connection to the business or competitive strategy?

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(i) How would you describe the actions that occur as the individual elements of the PM Process Groups interact with PM Knowledge Areas?

(ii) What is your experience with the actions (forty- seven actions) that occur at this intersection?

viii) How would you describe interaction (positive or negative) of customer management, supply chain management, and project management?

ix) Additionally, how do they (customer management, supply chain management, and project management) cumulatively support the execution of the overall strategy (both business and competitive) of the firm?

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        (1) Describe the, who, what, when, and where of your plan.
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    ii) Describe the process of executing your plan.
        (1) How would you describe the initiating, planning, executing, monitoring / controlling, and closing processes within your plan?
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5) Given that the customer order expedite is of strategic value, how is the new fulfilment plan executed to guarantee that the new commitment dates are met?
    a) As part of the plan, who is responsible for its successful execution?
        i) Is it an individual, a dedicated group or team, or an assemblage of disparate individuals?
        ii) Is it the customer, the sales person, a customer service representative, the business unit product or marketing manager, or an executive manager?
        iii) Is it the supply chain manager, the production manager, the vendor manager (purchasing agent), the scheduler, or the demand planner?
    b) Given your experience, in this scenario, how would you describe the role and the interactions of the party that is responsible for the successful execution of the plan?

i) Are those individuals dedicated to the management of this plan from its inception to its closure, or is the execution of this plan in addition to their normal daily responsibilities.

ii) What skills will those individuals employ to manage the successful execution of the plan?

   (1) How would you describe the individual skills requirement (maybe: initiating, planning, executing, monitoring / controlling, and closing)?

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   (2) Will those individuals engage the supply chain manager, the production manager, the vendor manager (purchasing agent), the vendor, the scheduler, or the demand planner?

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