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The Challenges of Cultural Business Relationships Within Manufacturing

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Walden University

College of Management and Technology

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DeLariah Katherlene Jones

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Walden University
2016

Abstract

The Challenges of Cultural Business Relationships Within Manufacturing

by

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MS, Florida A&M University, 1998

BS, Florida A&M, 1997

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

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Abstract

Manufacturing leaders seek strategies to improve cross-cultural business relationships because of the increasing demand for outsourcing, which requires strong partnerships among manufacturing supply chain members. The purpose of this qualitative single case study was to explore successful strategies that manufacturing business leaders use to improve cross-cultural business relationships within their manufacturing supply chain. The targeted population included business leaders, fluent in English, within 1 company located at 2 different manufacturing sites in the Midwest region of the United States and the Northeast region of Mexico. The capability-based view theory was used to support knowledge sharing, trust, and strategic management. Methodological triangulation of the data from interviews, direct observations during site visits, and production documentation led to 4 themes. The 4 themes that emerged from thematic analysis were: information sharing, which was key to form a strong partnerships between the 2 manufacturing sites; the development of common business tools, which facilitates the development of common technical language that both sites understood and could translate into common expectations; training of business tools and processes, which expands knowledge sharing and best practices among the 2 sites; and understanding differences of people rather than culture. The implication for positive social change includes the potential to provide strategies to business leaders within various manufacturing industries on how to overcome the challenges of trust, information sharing, and resource management and provide successful cross-cultural business relationships and profitability.

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Dedication

I dedicate this study to my husband, Terrell, and my children, Kaitlyn, Terrell, and Jevon. You are my biggest cheerleaders. You have encouraged and pushed me to be all I can be. I love you all.

I would also like to dedicate this study to my grandfather, Jesse Williams. Thank you for building our family to strive for educational excellence. You allowed your family to stand on your back to elevate us to the next level.

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My biggest thank you goes to my Lord and Savior, Jesus Christ. I could not have done this without you. You gave me the strength to persevere when times seem dark, and I was frustrated. "I can do all things through Christ who strengthens me." (Philippians 4:13)

Thank you, Dr. Lisa Kangas, for being a great mentor and chair. Your encouragement, extensive help, and your can-do attitude helped me to overcome many obstacles to achieve my goal to finish my study. I also want to thank my committee members, Dr. Judith Blando and Dr. Robert Hockin, for your guidance and suggestions, which contributed to my achievement of completing my doctoral study. Lastly, I would like to thank all the other Walden University personnel that have helped me during my time at Walden.

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Section 1: Foundation of the Study

Fortune 500 companies outsource manufacturing to shorten their international manufacturing chains and improve import and export tax expenses and profitability through foreign exchange rates and taxes (Ellrum, Tate, & Petersen, 2013). The use of outsourcing helps to reduce capital investment expenses, transportation cost, and inventory (Ellrum et al., 2013). Outsourcing manufacturing to foreign manufacturers, whose cultures and management strategies may vary from the originating domestic manufacturers, may affect significant components that create profitability (Larsen, Manning, & Pedersen, 2013). The components are manufacturing processes, product quality, and information flow (Larsen et al., 2013). Challenges exist for business leaders using outsourced manufacturing to develop relationships that encourage resource dependence, information sharing, and trust of the management of the manufacturing sites (Ellrum et al., 2013). The relationships must also support profitability and maintain in order to improve competitive advantage (Paulraj, Chen, & Lado, 2012). The intent of this study was to explore successful strategies that manufacturing business leaders use to improve cross-cultural business relationships.

The purpose of Section 1 is to detail the study's problem and background, the purpose, the nature of the study, and the research and interview questions for the study. Section 1 also provides details on the study's conceptual framework, the capability-based view, as well as assumptions, limitations, and delimitations used for the study and the significance of the study. Within Section 1, a comparison and contrast of the available literature regarding the study's problem is available.

Background of the Problem

The outsourcing of U.S. manufacturing plants and operations to non-U.S. sites prompted the exploration of how cultural differences influence manufacturing (Larsen et al., 2013). Outsourcing also led to the examination of how to improve relationships that strengthens the ability of companies to protect trade secrets threatened by the variance of non-U.S. intellectual property protection laws (Pagnattaro, 2012). Outsourcing of U.S. manufacturing brought to light cultural differences among manufacturing site members that hinder the development of relationships with business partners (Larsen et al., 2013). Other reported effects of outsourcing are the decline of jobs in the United States, loss of profitable business practices resulting from the lack of relationship building, and tainted profit growth resulting from the decrease of work labor cost (Larsen et al., 2013).

Literature sources support strategic management decisions to use business processes such as Six Sigma and Lean Management to achieve profitability (Arumugam, Antony, & Linderman, 2014). Sources also support the idea that strategic positioning and relationship building among members of the manufacturing chain aids in achieving competitive advantages (Dues, Tan, & Lim, 2013). Available sources provided details on how to redesign manufacturing processes using various strategies to gain competitive advantage and improve organizational performance (Gawankar, Kamble, & Verma, 2013). These sources demonstrated the effectiveness of relationship building, but the sources do not include exploration of strategies on how to improve cross-cultural business relationships.

Problem Statement

Outsourcing of manufacturing, supported by Fortune 500 business leaders, increased productivity and profitability through lower wage payout, currency transfer rates, import and export taxes, and transportation expenses (da Silveira, 2014). From 1997 to 2012, manufacturing productivity increased by 38% while U.S. manufacturing employment decreased by 26% to 50% and outsourcing to domestic contractors and foreign companies increased (Houseman, 2014). The general business problem was that some business leaders in the outsourcing of manufacturing experience negative effects because of the lack of cross-cultural business relationships, which results in the loss of profitability. The specific business problem was that some business leaders in manufacturing lack strategies to improve cross-cultural business relationships.

Purpose Statement

The purpose of this qualitative single case study was to explore strategies manufacturing business leaders use to improve cross-cultural business relationships within their manufacturing supply chain. The targeted population included business leaders, fluent in English, within one company located in two different manufacturing sites, the Midwest region of the United States and the Northeast region of Mexico, who have implemented successful strategies to improve cross-cultural business relationships. The implication for positive social change from this study included the potential to provide information to improve profitable relationship building that overcomes the challenges of trust, information sharing, and resource management among cross-cultural manufacturing sites.

Nature of the Study

I used a qualitative methodology for this study. The qualitative research method is the best method to use to explore organizations through relationships, communities, or programs (Babbie, 2015; Baxter & Jack, 2008). The qualitative research method also permits the exploration or description of a trend using a variety of data sources (Babbie, 2015; Baxter & Jack, 2008). This research method also supports a participatory worldview, which includes examination of change through observational research (Babbie, 2015). The use of a quantitative method is for the validation of theory (Yin, 2014). The unchosen methods are quantitative and mixed research methods because the quantitative method validates theory, whereas the goal of this study was to develop and explore a theory (Yin, 2014). The mixed method uses both the qualitative and quantitative research methods to develop, explore, and validate a theory; however, this study does not validate a theory. Selection included a qualitative method for this study because the purpose of this study was to develop and explore a theory.

I used a single case design in this study. A single case design includes the exploration of theory in order to confirm, challenge, or extend a theory (Baxter & Jack, 2008). A case study allows an examiner the opportunity to observe and analyze a trend previously unavailable to social science inquiry (Yin, 2014). The qualitative case study supports the constructivist paradigm, which recognizes the importance of the human interpretation of the theory, trend, or events (Baxter & Jack, 2008; Yin, 2014). This approach allows a close relationship between the researcher and the participants while empowering the participants to tell their stories or experiences (Baxter & Jack, 2008).

Research Question

The research question was: What strategies do business leaders in manufacturing use to improve cross-cultural business relationships? This research question aligns with the study's specific business problem and purpose statement of improving cross-cultural business relationships.

Interview Questions

I asked participants the following nine open-ended interview questions during the interview process:

1. What business climate, culture, management, and information sharing do you use at your manufacturing site to improve business relationships?
2. What strategies do you use to develop trust and share information within and outside of your manufacturing site?
3. What business programs, such as Six Sigma and Lean Management, does your manufacturing site try to use to improve trust and share information within and outside of your site?
4. How do your domestic culture, management, and information sharing differ from your manufacturing counterpart?
5. How does culture affect your business relationship if your culture, management, and information sharing differ from your manufacturing counterpart?
6. How do your local policies affect your business relationships?

7. What procedures and steps do you use to improve relationships when cultural differences are present at the manufacturing sites?
8. What rules do you use to improve a business relationship between differing manufacturing sites?
9. Would you like to add anything that I might have missed?

Conceptual Framework

The conceptual framework for this study is the capability-based view. The study used the capability-based view to explore the importance of business practices, purchasing, supplier selection and involvement, customer focus, top management support, relational governance, and interorganizational communication for improving business performance when using outsourcing (Paulraj et al., 2012). Coase (1937) and Williamson's (1975) transactional cost economic theory, developed in 1978, evolved into the capability-based view (as cited in Hatonen & Eriksson, 2009). The capability-based view developed in the 1990s and earlier 2000s by Dyer and Singh (1998) and Kale, Singh, and Perlmutter (2000). Dyer and Singh and Kale et al. understood that supply chain practices and organizational capabilities intertwine, suggesting that the combination of the practices and capabilities can produce a sustainable competitive advantage. The capability-based view can be broken into three categories: transactional, translational, and relational supply chain management, which are business practices that can combine to provide potential competitive advantage within manufacturing chains (Paulraj et al., 2012). These three practices can foster relational capabilities and knowledge-based assets, which can grow through cooperative relationships with manufacturing partners

(Paulraj et al., 2012). Relational capabilities are relation-specific assets, knowledge sharing routines, complementary resources and capabilities, and effective governance (Dyer & Singh, 1998; Paulraj et al., 2012).

The capability-based view theory applied to this study because the theory supports outsourcing and the use of capability assets such as knowledge sharing, trust, and strategic management (Dyer & Singh, 1998; Paulraj et al., 2012). These assets provide profitability, which is a requirement for international manufacturing. However, manufacturing business leaders lack strategies to improve cross-cultural business relationships to use capability assets effectively, which affect profitability.

Operational Definitions

Competitive advantage: “Competitive advantage is an advantage gained over competitors by offering customers value that the competitor could not offer, either through lower prices or providing additional benefits and service” (Ehmke, 2008, p. 1). According to Porter (2012), “competitive advantage grows fundamentally out of value a firm creates for its buyers that exceeds the firm’s cost of creating it” (p. 26). The measurement of competitive advantage is a business’ market share and profitability for a product (Porter, 2012).

Differentiation: Porter’s generic strategies of cost leadership, differentiation, and focus are the keys to successful products (Tansey, Spillane, Meng, 2014). When an innovative product provides features that its competitors cannot provide nor offer at a reasonable price, the product is a cost leader and differentiates from its competitors.

Global sourcing: Global sourcing is the incorporation and synchronization of procurement requirements across global business units and the investigation and construction of common items, processes, technologies, and suppliers (Petersen, Frayer, & Scannell, 2000).

Supply chain management: Supply chain management is the administration of multiple relationships across the supply chain, which includes the production and delivery of physical products to a customer (Hugos, 2011).

Value chain: Value chain of a product is the designing, producing, marketing, delivering, and supporting of a product (Porter, 2012). A well-designed value chain for a product provides differentiation, which includes a cost advantage. Low-cost production of a premium product provides a business the ability to name their selling cost, which is usually higher than its production cost and provides a substantial profit margin.

Assumptions, Limitations, and Delimitations

The purpose of this qualitative case study was the exploration of successful strategies to improve business relationships, information sharing, trust, and success within cross-cultural manufacturing chains. Numerous cross-cultural regions exist and are appropriate for this study, but studying all regions is unrealistic. For a study, the scope must be established, which will delimit and establish boundaries to make the study valid and reliable (Ellis & Levy, 2009). The study included assumptions, limitations, and potential weaknesses.

Assumptions

Assumptions are ideas or thoughts accepted as truths without evidence to validate the assumption (Ellis & Levy, 2009). One assumption of this study was that managers and supervisors with cross-cultural backgrounds unconsciously infuse their worldviews, cultural perspectives, and government rules into the development of business relationships. I attempted to diminish my cultural bias toward the participants through the study's research questions, measuring tools, and communication. I attempted to limit the amount of cultural bias by allowing the participants representing the cultures within the study to review their responses and the results. The participants' review of the study information ensured that the participants in the study understood the information provided during and after the study. I attempted to secure the participants' integrity and honesty by guaranteeing the confidentiality of their responses and their identities. An assumption of the study was that participants would answer the interview questions honestly.

Limitations

Limitations are potential weaknesses of the study that could jeopardize the internal validity of the study (Ellis & Levy, 2009). The population of this study consisted of managers and supervisors at two manufacturing sites in the Midwest region of the United States and the Northeast region of Mexico. The use of only two geographical locations for the study limited the study and generalizations. The participants' characteristics, such as gender, age (as long as the age was over 18), and work experience, had no influence on the study and were limitations of the study. The short

amount of time to build a rapport and trust with some of the participants did hinder the participants' willingness to share information, which created a limitation of the study. This study represented an initial probe into finding opportunities to create business relationships among manufacturing personnel within cross-cultural manufacturing sites, which makes the limitations of the study acceptable.

Delimitations

The delimitation of a study provides the scope of the study and sets the boundary for a study (Ellis & Levy, 2009). The scope of this study explored the insights of two manufacturing sites' decision-making managers and supervisors. The results of this qualitative case study are from two manufacturing sites within one U.S. Fortune 500 company. The population consisted of manufacturing leaders over the age of 18 in functionally equivalent manufacturing roles at two sites who have successfully implemented strategies to improve cross-cultural business relationships. The exploration of cultural influences on business and the implementation of new process strategies were outside the scope of this study.

Significance of the Study

This study includes value to the practice of business because company leaders seek information and opportunities that can help maintain and improve profitability. The increased use of outsourcing has created challenges for building profitable business relationships among cross-cultural manufacturing sites. The contributions to professional or practitioner application were the findings from this research study, which provided valuable information and insights for developing strategies to improve business

relationships. The implications for positive social change included the potential to provide strategies that manufacturing business leaders can use to improve profitable business relationships.

Contribution to Business Practice

The contribution to business practice of this study was the reduction of the information gaps regarding building business relationships among cross-cultural manufacturing members. The data from the study can aid manufacturing managers in the development of strategies to improve and maintain business relationships among cross-cultural manufacturing sites. Companies' leaders have to examine whether outsourcing of manufacturing truly brings profitability because of the study's findings.

Implications for Social Change

The findings of this study might contribute to positive social change by developing strategies that pertain to cultural differences that promote relationship building and encourage profitability. The participatory worldview and qualitative analysis assist the exploration of how to globalize manufacturing using appropriate relationship building strategies to overcome culture differences (Larsen et al., 2013). This research would aid manufacturing management in developing strategies to improve profitability through better business relationships in international manufacturing.

A Review of the Professional and Academic Literature

This section includes a review, examination, analysis, and synthesis of existing literature within various economic, supply chain, and operation management journals and scholastic supply chain books that details outsourcing, which facilitates uncovering the

importance, design, and profitability of international manufacturing chains and outsourcing. More than 60 peer reviewed articles, 85% of the total sources within this literature review section, were within 5 years of the study's date. The literature presented in this section also included the rules governing international manufacturing chains and the challenges of international supply that companies experience. This literature review covers eight topics. The topics are (a) the capability-based view, which is the study's conceptual framework; (b) the importance of supply chains; (c) strategic positioning; (d) supply chain management and profitability; (e) globalization and foreign policy; (f) the design of the manufacturing chain; (h) international manufacturing chain relationships, and (i) cultural differences.

Limited literature exists regarding the lack of relationship building among manufacturing members. In addition, literature is also limited regarding the development of cross-cultural business relationships among manufacturing sites. Using the findings from the study, companies' leaders can explore cultural differences within business relationships in an international manufacturing chain.

Houseman (2014) discovered that from 1997 to 2007, manufacturing productivity, profitability, and outsourcing to domestic contractors and foreign companies had increased, and U.S. manufacturing employment had decreased. However, the increase in profitability is potentially misleading (Larsen et al., 2013). The increased profitability includes lower wages and capital investment, which supports the conceptual framework of the capability-based view (Dyer & Singh, 1998). Although profitability seemed to increase, the capability-assets, the increased cost of management to handle cultural

differences and foreign policies, and the lack of trust and information sharing are hidden (Larsen et al., 2013). The purpose of this qualitative case study was to explore strategies to improve business relationships in cross-cultural manufacturing sites. The case study included the outsourcing of a product within one U.S. Fortune 500 company manufactured in a U. S manufacturing site to an international manufacturing site.

Importance of Manufacturing Chains

Many businesses shortened global manufacturing chains to increase profitability. Studies supported the idea that global sourcing and manufacturing chains provide price and cost benefits, improved quality and time delivery, and enhance companies' competitive position (Caniato, Golini, & Kalchschmidt, 2013). Classified outsourcing companies operate in increasingly competitive industries and have the need to respond to competitive demands with cost-cutting objectives such as shortening manufacturing chains (Pelegrin & Bolance, 2013). With the need for companies to be financially viable in an increasingly competitive international environment, the decision to develop international manufacturing chains and partners is a simple form of corporate restructuring (Pelegrin & Bolance, 2013). The three main motives for foreign direct investment by international companies and manufacturing chain members are to secure market share, lower costs of production, and gain access to resources not available domestically (Pelegrin & Bolance, 2013).

Secondary motives for international manufacturing chains are to grow capacity demands, gain access to better technology, and improve service to customers (Pelegrin & Bolance, 2013). Companies also tend to favor the sourcing capabilities from the

marketplace because of the potential operational benefits it can provide (McCarthy, Silvestre, & Kietzmann, 2013). These benefits are production efficiency, enhanced product and service quality, better process responsiveness and dependability, and increased product variety and process variation (McCarthy et al., 2013).

The assumption is that the decision to outsource or develop a manufacturing chain is strictly a decision of a company. Research is available that contradicts that assumption. Pehlivan, Berthon, Pitt, and Chakrabarti (2013) determined that the market dictates decisions to outsource, and outsourcing can happen whether a company wants outsourcing or not. A company's relationship with its manufacturing chain partners are sometimes involuntary and bound by contractual agreements in an attempt to deliver competitive advantages (Pehlivan et al., 2013).

One commonly held assumption is that manufacturing chains are a necessity for achieving competitive advantage (Porter, 2012). However, as businesses expand into other countries and trade competition increases, the broader and more diverse the manufacturing chain becomes. Matus, Clark, Anastas, and Zimmerman (2012) discussed maintaining viable practices that require a concert of efforts including industry-wide cooperation, governmental openness, and education reform. Matus et al. also discussed the establishment of a clear, measurable, executable, globally accessible definition of business sustainability, and the need to tear down walls and increase cross-functional efforts.

Li, Humphreys, Yeung, and Cheng (2012) developed and tested a model to explore how manufacturing chain quality management influences sustainability. They

showed how business practices correlated with supplier participation strategy, which influences quantifiable business results and customer satisfaction levels (Li et al., 2012). The data also showed that practices correlated with the supplier selection strategy (Li et al., 2012). Robb, Liu, Lai, and Ren (2012) explored the correlation between manufacturing chain and operations practices and operational and financial performance. Robb et al. developed a structural equation model that explored these connections using data from a survey of 72 furniture manufacturers located throughout China (Robb et al., 2012). The results from using the structural equation model showed the relative significance of manufacturing chain and operations practices, and the influence operation practices has on business performance as facilitated by capabilities on operations dimensions (Robb et al., 2012).

Capability-Based View

Dyer and Singh (1998) and Paulraj et al. (2012) explored creating and sustaining competitive advantage using the capability-based view but did not explore the work that is needed to obtain the advantages of capability-based view or the hidden costs of using the capability-based view. Larsen et al. (2013) explored the complexity of combining various manufacturing members into one system and the challenges that come with the complexity. As the complexity increases, organizational tasks and activities require continuous communication to coordinate decisions and behaviors (Larsen et al., 2013). Complexity decreases the ability of manufacturing management to account for all important decision factors and hidden costs associated with the decisions (Larsen et al., 2013). Dibbern, Winkler, and Weinzl (2008) identified four hidden costs associated with

the relational view, requirements specification and design, knowledge transfer, control, and coordination. These four hidden costs are also organizational needs, which relates to knowledge transfer, new interdependencies, training and coaching, and intellectual property protection (Larsen et al., 2013). Examples of these hidden costs are: (a) cultural cost, (b) reduced learning capabilities, and (c) knowledge transfer cost (Larsen et al., 2013). Larsen et al. explored how the practice of offshoring could undermine financial value and how international relocation of manufacturing tasks can create unexpected costs, impair trust and information sharing, and require additional relationship building efforts.

Cross-cultural manufacturing chains created a general business problem of how to improve cross-cultural relationships that include respect for each other's capabilities and culture. Bardy (2012) examined how cultural differences influence performance in a manufacturing chain. Bardy identified the biggest risks to successfully using cross-border manufacturing chains as the lack of trust, application of skills, the ability or willingness to cooperate, and insufficient power of decision-making. McCarthy et al. (2013) also supported that one big challenge with international manufacturing chains for existing internal activities is information asymmetry. When businesses involved in an outsourcing agreement do not have equal access to the same amount or quality of information, information asymmetry occurs (McCarthy et al., 2013). Information asymmetry damages partnerships and interrupts the performance of the whole supply chain.

To prevent damage to partnerships and performance, business leaders found the importance of adopting strategies to create a homogeneous communication system for

information sharing that has limited implementation costs and provided sustainability. Thomas, Thomas, Manrodt, and Rutner (2013) examined the challenge of information asymmetry and relationship building. Using the resource advantage theory within the relationship-marketing framework, Thomas et al. (2013) examined the role of trust to govern the fairness-loyalty relationship within a supplier and buyer relationship.

McCarthy et al. stated the second challenge is capability fit, which is the matching of a buyer's needs with the supplier's offerings. Capabilities develop from how firms combine, organize, and work their resources to produce offerings (McCarthy et al., 2013).

Strategic Position

The available literature does not seem to focus on cultural differences among manufacturing chain members or the areas of business that they affect. The available literature tends to focus on the strategic position of members and achieving competitive advantages. Decision-making about outsourcing at a strategic level focuses on the realization of the market and product strategy, defining core competencies of a company, and identifying potential manufacturing activities to complete the value chain (Shishank & Dekkers, 2013). At an operational and tactical level, the main consideration for the decision to outsource is capacity management and resource allocation and measuring performance against targets (Shishank & Dekkers, 2013). Strategically, the important principles are the linking of the capabilities of a company to the external resources to support the company's competitive advantage, cost reduction, the acquisition of capabilities, and competitive strategic positions or fit with current product platforms

(Shishank & Dekkers, 2013). The Tactical level is resource allocation, which takes place based on either specific customer orders or new product development (Shishank & Dekkers, 2013). The operational level caters to solutions for capacity planning (Shishank & Dekkers, 2013).

Hajmohammad, Vachon, Klassen, and Gavronski (2013) researched how supplier relationships can secure broader objectives other than organizing the flow of supply materials, such as developing lean and green manufacturing chain members. Pagell and Shevchenko (2014) examined the factors that drive or hinder organizations to implement green/sustainable manufacturing chain management initiatives. Internal barriers included cost and lack of acceptability, whereas external barriers include regulation, poor supplier commitment, and industry-specific barriers (Pagell & Shevchenko, 2014). An explorative study by Pagell & Shevchenko (2014), based on interviews with ten firms, included best practices for manufacturing chain management to use to overcome the barrier.

Dues et al. (2013) provided research that supported the use of three strategies, green, lean, and international manufacturing chains. Although the three strategies seem to be contradictory to each other, the trade-offs and optimization possibly could lead to a future performance enhancement for international manufacturing chains (Dues et al., 2013). With the possibility of performance enhancements, some companies and manufacturing chain members are encouraging green (environmental awareness) through strong supplier relationships. Some environmental management initiatives focus on efforts within organizations while many others entail collaborating with manufacturing chain partners (Lin & Sheu, 2011).

Green refers to environmental awareness, which is somewhat similar to lean principles of reducing waste. Green encourages reducing environmental waste. Positive manufacturing chain relationships can encourage green throughout the manufacturing chain by requiring manufacturing chain members to be environmentally certified and encouraging capital investments within each other's company to achieve green initiatives (Hajmohammad et al., 2013). Lee, Olson, and Trimi (2012) provided evidence that suggests strong partnerships within a manufacturing chain that support green through the entire chain provide a competitive advantage to every member of the manufacturing chain.

Smaller manufacturing chain members potentially need capital investment from another (larger sized) manufacturing chain member, which may pose potential concerns and require cost evaluations. For many large companies, the net present value (NPV) analysis is the most recognized analysis for examining the worth of capital projects and providing value to stockholders (Ross, Westerfield, & Jaffee, 2010). The accepted norm for NPV analysis is to accept positive NPV projects for which the value is higher than zero (Ross et al., 2010). The thought is that positive NPV projects benefit stockholders and raise the value of the company (Ross et al., 2010). Although an NPV is positive, the NPV value can be low, which requires further analysis to determine the benefit the project could provide before accepting or rejecting the project. For low, positive NPV, companies evaluate the internal rate of return (IRR), sunk costs, opportunity, and allocated costs and side effects associated with the capital investment or project.

Scholars think that improvement in the environmental performance of products lies within the manufacturing chain (Lin & Sheu, 2011). The green supply chain management concept developed from companies' management choosing to work closely with their suppliers and other trade partners when developing and applying their environmental management strategies (Lin & Sheu, 2011). For the application of green supply chain management, the sharing and incorporating of environmental ideas and efforts across organizational boundaries will enhance sustainability and competitive advantage (Lin & Sheu, 2011). Lin and Sheu's (2011) study of green supply chain advantages and collaborations also gave an examination of the use of the transaction cost economics (TCE) theory for the governance of contract and relational adaptation.

Chiarini (2013) conducted a case study to support the use of standardization within in a manufacturing chain to achieve competitive advantage. Studies included examinations of the use of the International Organization of Standardization (ISO) 14001, the most widely used environmental management system in the world with over 223,000 organizations certified worldwide in 159 countries (Chiarini, 2013). The study compared the levels of integration and sustainability within a manufacturing chain. In addition, Psomas and Kafetzopoulos (2014) supported the idea of generalizing ISO standards (9001) to provide a guideline to how to obtain a managed, green manufacturing chain that is profitable. Green, Zelbst, Meacham, and Bhadauria (2012) supported the implementation of green supply chain management practices, which led to improvements in environmental, economic, and operational performance.

Many companies connect their values to their sustainable development (economic, social, and environmental issues). Many companies pride themselves on employing the right people and organizational partners. Business plans include development to accomplish optimal efficiency in manufacturing and logistics, which includes environmental and economic sustainability within companies' strategies.

Business processes monitor the life cycle of products, which lead to identifying new products and market opportunities (Doha, Das, & Pagell, 2013). Many companies have a holistic approach to product life cycle management. Some companies have requested that their manufacturing chain partners and members have a product life cycle (Miller, 2009). The product life cycle includes the examination of raw materials, manufacturing, transportation and logistics, customer use, and disposal.

Manufacturing, transportation, and logistics address operations designed to meet society and companies' expectation for environmental improvement. Some companies have implemented the 3P program, pollution-prevention-pay, which sets corporate environmental goals, drives progress, and reduces greenhouse gas emissions (Miller, 2009). Some companies have addressed customer use and disposability of products by helping customers understand the environmental challenges to reducing emissions (Miller, 2009). Many companies' policies have set standards for its suppliers. The standards ensure that suppliers meet health and safety, environmental, transportation, and labor and human resources goals (see Figure 1).

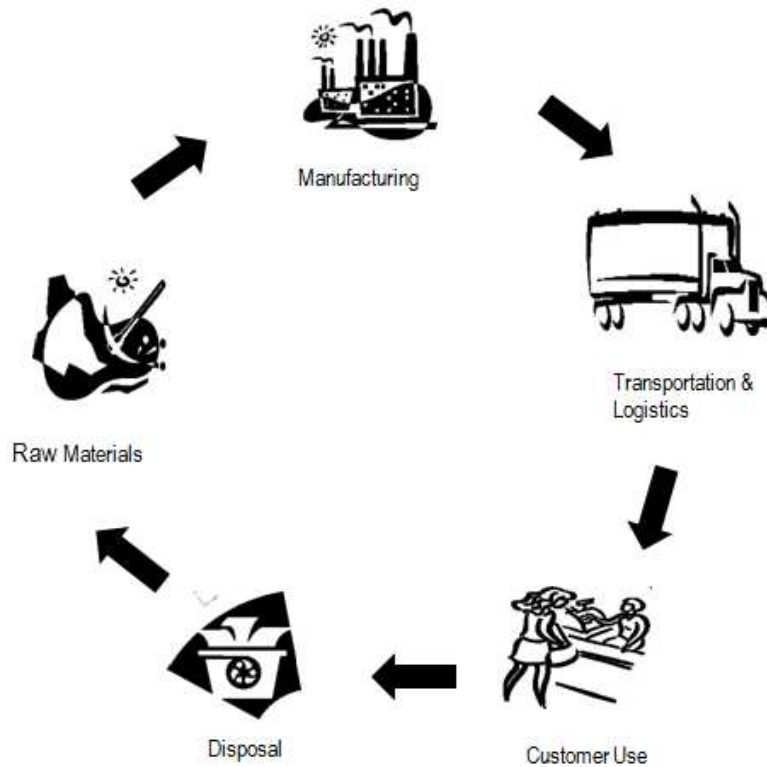


Figure 1. The lifecycle of a product (Miller, 2009).

The development of a life cycle management assessment matrix addresses the challenge of finding a rational way of measuring products' lifecycle without each one undergoing a comprehensive life cycle assessment. The evaluation matrix provides a standardized process for assessing products' lifecycles. The period for evaluation varies with the complexity of the product and can take several months to complete. Business leaders use the matrix to detect risks and environmental health and safety (EHS) performance in a relatively simple way. The results from the matrix help business leaders identify needs (such as further research), which can lead to innovations (Miller, 2009).

Manufacturing Chain Management and Profitability

Danese (2013) tested to determine whether a relationship between manufacturing management procedures, operations capability, and firm performance and how much influence practices have on capability and performance exist. Results from the study supported the theory that practices do have a direct correlation with capability and performance (Danese, 2013). Caniato et al. (2013) and Petersen, Frayer, and Scannell (2000) identified several important factors related to effective international sourcing. The factors are international sourcing organization and focus, which included examination of manufacturing chain management, foreign language skills, and international sourcing business capabilities, which included understanding the foreign business structure, customs, and opportunities. Gavronski, Klassen, Vachon, and Machado do Nascimento (2012) provided evidence that organizational learning and knowledge system has an influence on sustainable operations. In addition, articulation of knowledge and learnings to employees as process improvement and innovation rather than the parent company requirements benefits business process as well as employees' morale (Gavronski et al., 2012).

The necessity to reduce cost by at least 10% to 15%, which labor is the largest cost component, drives the decisions to outsource (Lacity & Willcocks, 2012). Outsourcing and offshoring of labor to places such as China and India usually reduced cost by an average of 3% to 5%, which the reduction in labor cost is a powerful cost reduction levers based on economies of scale (Lacity & Willcocks, 2012). Outsourcing decisions resulted in 60% positive outcomes, 16% negative outcomes, and 25% no

change in performance consequence of outsourcing (Lacity & Willcocks, 2012). Lacity and Willcocks (2012) determined that the positive outcomes and no change in performances come from strong contractual and relational governance and managing capabilities.

Although outsourcing and international manufacturing chains became a strategy to reduce cost in much of western manufacturing, an emerging rationale for outsourcing is to become innovative through increased focus and suppliers' competencies (Sarmiento, Shukla, & Izar-Landeta, 2013). Sarmiento et al. (2013) examined low-cost outsourcing strategies versus innovation outsourcing strategies, which each strategy has distinctly different effects on costs and innovation capability. Trade-offs exist between improving innovation capabilities and reducing costs (Sarmiento et al., 2013). Low-cost outsourcing does not support innovation, known to provide growth, and innovation outsourcing provides for growth and cost performance (Sarmiento et al., 2013). Hassini, Surti, and Searcy (2012) provided research to support a framework for sustainable manufacturing chain management and performance measures. Tewari and Misra's (2013) research supported Hassini's et al (2012) by developing a manufacturing chain evaluation framework through performance assessment approach, although, barriers exist that need to be overcome such as communication barriers - information sharing.

Globalization and Foreign Policy

The recognition of the globalization of companies and its manufacturing chains was as early as 1977, which led to government policies to govern foreign trading and manage international manufacturing chain members (Colon & Bladuell, 2014). Policies

such as the Foreign Corrupt Practices Act (FCPA) of 1977 and the development of the Organization for Economic Cooperation and Development are governmental steps to recognize the globalization of companies and its manufacturing chains and manage their actions (Colon & Bladuell, 2014). The governing of international companies and the development of the best law practices is challenging for the government, and the development of best operating practices within international manufacturing chains are also challenging (Ntim & Soobaroyen, 2013). The protection of companies' trade secrets and intellectual property remains a challenge because of the variance of international governmental protection laws (Pagnattaro, 2012). One challenge is in the stopping of employees from transferring information from one company to another in countries other than the United States (Pagnattaro, 2012). This challenge forced many companies considering outsourcing to other regions to examine the effects of diversification versus political risk (Puck, Rogers, & Mohr, 2013).

Puck et al. (2013) examined political risks to expand abroad, which these challenges encourage information asymmetry. The lack of protection of information sharing causes the issue many companies embark on during outsourcing agreements. The lack of information protection facilitates the lack of *perfect information* companies have about each other's needs and offerings, and the undisclosed strategic and innovation plans tends to affect outsourcing performance (McCarthy et al., 2013). The tendency is for suppliers to *blind* buyers by concealing operational information and cost and demand forecasts, and suppliers *squeeze* other suppliers to try to extract operational benefits, often unrealistic and unsustainable (McCarthy et al., 2013).

Outsourcing contracts, which are agreements between the receiver and provider, are used to facilitate the outsourcing process, regulates the mission, builds the foundation, generates awareness about the future needs, acts as insurance against uncertainty, and shapes the fundamental factor of the receiver-provider relationship (Bhattacharya, Sing, & Bhakoo, 2013). Although many companies engaged in outsourcing and manufacturing chain partnerships, a significant number of these arrangements and contracts fail to fulfill the expectations that the companies have for them (Bhattacharya et al., 2013). For example, a \$1.6 billion IT infrastructure outsourcing contract between Sears and Computer Science Corporation (CSC) broke down within one year of the deal, the contract was for 10 years, with CSC blaming the opportunistic behavior of Sears (Bhattacharya et al., 2013).

Contractual outsourcing and manufacturing chains fail for a number of reasons. Studies have revealed that some of the reasons for the failures are communication gaps, opportunistic behavior, and the lack of control and understanding, and the fear of dependency on one partner or another (Bhattacharya et al., 2013). Writing and enforcing the perfect contract is a challenge for every party involved because of the dynamic market for products, which means the contract would need to change constantly to accommodate evolving market (Bhattacharya et al., 2013). Bhattacharya et al. (2013) used agency theory to explore contract characteristics and aid to design the most efficient contracts in a cooperative situation. Bhattacharya et al. provided evidence that formality and informality are requirements in an outsourcing contract; information asymmetry is important, but a sensitive issue; and mutual dependency is a necessity.

Mutual dependency can be rewarding, such as shared inventions and patents that can produce revenue for the companies involved and produce a long-standing relationship. The relationships can also be challenging to coordinate inter-functions and inter-organizations, such as the sharing of core technology or resources with others. Some company leaders discourage the sharing of core technology and competency because of the potential of losing competitive advantages or power. Another issue is that some company leaders discourage becoming supplier dependent, which also gives a sense of lost power and make the feeling of vulnerability arise (Trkman & Desouza, 2012). In addition, a company's culture may present an issue if the culture is different from a partner (Trkman & Desouza, 2012).

Design of Manufacturing Chain

Gawankar et al. (2013) investigated the effect of manufacturing management practices on competitive advantage and organizational performance. Petersen et al. (2000) provided three primary strategies for international sourcing: (a) finding qualified suppliers for required materials and services; (b) entrance into a joint-venture relationship; and (c) making a 100% equity investment in a foreign country. These strategies require more capital and longer-term commitment (Petersen et al., 2000). Petersen et al. suggested to use a four-stage evolutionary process, (a) domestic purchasing only; (b) need-based foreign purchasing; (c) foreign buying as part of procurement strategy; and (d) and integration of global procurement strategy, for adopting international sourcing strategies.

Some areas of discourse, contention, or divergent perspectives exist. New and Ramsay (1997) highlighted problems regarding the Lean manufacturing chain approach of ideology, society, and politics. New and Ramsay also asked the question who determines what system or tools are better than another to use within a manufacturing chain. They also bring to attention how morals affect the manufacturing chain management (New & Ramsay, 1997).

Companies such as General Electric (GE) designed manufacturing chains using Six Sigma and Lean Management to achieve financial success and profitability. The Six Sigma method has two fundamental perspectives, rigorous quality control concept and improvement of profitability (Krueger, Parast, & Adam, 2014). Lean has the principle of reduction of waste and inventory (George, 2002). The combination of the methodologies indicated profitability. In 2002, the synergy of Lean and Six Sigma together facilitated the reduction of manufacturing overhead and quality cost by 20% and inventory by 50% in less than 2 years (George, 2002). Maleyeff, Arnheiter, and Venkateswaran (2012) provided insight into the advantages of Lean Six Sigma and the challenges of its deployment and sustaining improvements from the strategy. Critical issues are using Lean Six Sigma to produce cash flow in difficult economic times, development of the data based process management systems, and the use of working on improvement as a leadership development tool (Maleyeff et al., 2012).

The use of Lean Six Sigma tools contributed to the development of collaborative planning, forecasting, and replenishment initiatives with several important partners. 3M's manufacturing management partnership with West Marine, boating supplies retailer, is an

example of successfully using the tools, which yielded improved on-time shipment, in-stock improvement, and reduction of lead times (Blanchard, 2014). This example of partnership between 3M and West Marine showed trust of all entities within the manufacturing chain and a fully functional IT support system. Inter-functional coordination included an exploration of roles of trust, commitment, risk, dependence on the sustainability of internal functional sharing and coordination, functional shifting within the manufacturing chain, the role of various types of third party providers, the management of relationships between companies, and the sustainability of different manufacturing chain structures (Ramanathan & Gunasekaran, 2014). Trust and a superb information technology (IT) system are essential elements needed to make a manufacturing chain run efficiently, which support the goal of increasing profitability.

Researchers presented compelling arguments that Six Sigma and Lean can provide competitive advantages within in a localized supply chain. The researchers did not show if these same tools or management strategies could be beneficial to a cross-cultural manufacturing chain. An examination and a plan for conquering the obstacles and challenges such as issues in strategy, organizational culture, and training is a necessity for successfully using the methods (Krueger et al., 2014). Krueger et al. addressed localized organization cultures and training, but Krueger et al. do not address the international cultural obstacles and communication issues. Arumugam et al. (2014) provided a review of Six Sigma literature regarding its evolution and implementation, which details organizational culture but not international culture. Using Six Sigma, new roles such as white, yellow, and black belt are assign, which conflicts with the strong top-

down hierarchical orientation of some global manufacturing locations' culture. Naslund (2013) examined the critical success factors of lean and six sigma and implementation of the program. From the studies, the identified issues were management support and organizational cultures, which is a by-product of global cultural diversity (Naslund, 2013).

With the direction to study the phenomenon of Six Sigma and its effects, studies such as Krueger et al. (2014) provided a definition and theory of Six Sigma, implementation of the strategy, and its effects on innovation and firm performance. Although, these studies only address company culture changes and does not address international company culture and changes. Timans, Antony, Ahaus, and Van Solingen (2012) examined the Lean and Six Sigma methodologies separately, the integration of the two principles together, and finally the evolution of the combined principles. Timans et al. found that the adoption of a systemic approach is a necessity for implementing the combined principles to achieve homogenous implementation. A systemic implementation of the combined principles and sufficient scientific underpinning is the direction to take to implement these evolved tools (Timans et al., 2012). Droge, Vickery, and Jacobs (2012) determined that manufacturing chain practices may be structurally or situation dependent, which indicates that there may be different opinions from country-to-country on how to manage a cross-cultural manufacturing chain effectively.

Foster Jr, Wallin, and Ogden (2011) encouraged the study of manufacturing supply chain management's (SCM) influence on total quality management (TQM) and operation management practices. Rashid and Aslam (2012) provided a review of the

differences and similarities between TQM and SCM, which both have the same goal of customer satisfaction but achieved differently. TQM is intra-company relationships, which SCM is external business partner relationships used to achieve competitive advantage (Rashid & Aslam, 2012). Foster, Jr., et al. also discussed the placement of quality control systems such as ISO 9000 certification, Six Sigma, and Strategic Supply Management. Foster, Jr., et al. recommended more research on implementing systems for manufacturing chain management, but Foster, Jr., et al. did not have any discussion of the influences on international manufacturing chain members, the effects of culture, and how to implement systems.

The question arises of how to measure the true effect of outsourcing or manufacturing chains. Kitcher, McCarthy, Turner, and Ridgway (2013) used the Cobb-Douglas production function, $y=AL^{\alpha}K^{\beta}$, to measure productivity. Y is the process output - the magnitude of productivity, and A is Total Factor Productivity (TFP) – the other numerous sub-variables that are beyond that accounted explicitly for capital and labor (Kitcher et al., 2013). L is the labor input – hours of labor invested per product; K is the capital input – the capital investment required to facilitate production; and α and β are the elasticity constants, which derive using best fit to existing data (Kitcher et al., 2013). Outsourcing of internal functions can have a significant effect on firm productivity, but the magnitude and direction of that effect are not always favorable and is difficult to predict without a more fine-grained analysis of the TFP term (Kitcher et al., 2013).

International Manufacturing Chain Relationship: Trust and Information Sharing

Holma (2012) covered the human element of establishing positive buyer–supplier relationships and the development and sustainability of these relationships. Ryu, Lim, and Hong (2009) suggested that suppliers should select the appropriate governance mechanism, unilateral or bilateral governance, to deal with volatile relationships/environments. Bayat, Schott, and Zali (2014) provided evidence that supports that trust/strong partnerships and contracts have an effect on innovation and manufacturing chain performance.

Markmann, Darkow, and von der Gracht (2013) emphasized the importance of a diverse manufacturing chain, including both the suppliers and buyers, which are integrated and willing to share information internationally. Didonet and Diaz (2012) determined a strong relationship exist between manufacturing chain management and information systems (communication). The manufacturing chain management and information systems also have a positive effect on operational performance, which also indicated the need for a homogeneous communication system among manufacturing chain members (Didonet & Diaz, 2012). Pelegrin and Bolance (2013) provided evidence that international manufacturing chains have higher employment, sales, value added, capital, investment, and skilled labor compared to non-outsourcers. Outsourcing high-cost service activities could help companies remain competitive rather than shut down (Pelegrin & Bolance, 2013). With these commonly held assumptions, the question arises of how to achieve effective, profitable manufacturing chains.

Sabir and Irfan (2014) identified barriers regarding the implementation of manufacturing chain management techniques, which these techniques must thoroughly integrate into the processes of manufacturing chain partners to be successful. Companies, operating in challenging, competitive environments, typically encourage overcoming barriers and increasing competitive advantage and sustainability (Sabir & Irfan, 2014). Sabir and Irfan (2014) showed that barriers encourage overcoming barriers and improved firm performance.

Gotel, Kulkarni, Scharff, and Neak (2012) indicated that communications tooling needs more emphasis than engineering tools especially across cross-cultural countries (research participant). Gotel et al. also indicated that trust is necessary for the adoption of new tools. Norton, Yvette, Coulson-Thomas, and Ashurst (2013) examined Enterprise Resource Planning (ERP) systems history and trends to develop plans for improved ERPs. The findings were how to improve ERP with a full understanding of how information flows throughout an organization and is essential to ensuring that the information makes sense to every part of the system (Norton et al., 2013). Norton et al.'s findings led to an additional future exploration of how to make sure these findings are within a diverse manufacturing chain that has various international participants, but did not include discussion regarding how to persuade cross-cultural members to implement and use the ERP system.

With the high dynamics of the modern manufacturing systems and the globalization of the market, a prerequisite for companies is to produce high-quality, competitively priced products both swiftly and proficiently (Li, Yan, & Lin, 2012).

Multi-agent systems (MAS) are thought to be suitable for applications, which are modular, decentralized, complex, time-varying, and ill-structured (Li et al., 2012). Examples of such applications are operations, production strategy, and planning. MAS would help to synchronize these activities and would ideally create: (a) corporate presence; (b) create communication (internally and externally); (c) aid in corporate logistics management; (d) help globalization via networking; (e) increase collaboration and development; (f) improve information retrieval; (g) increase marketing and sales; and (h) improve transmission of data (Chan, Swarnkar, & Tawari, 2007).

The potential offerings of MAS are ideal for making decisions about operations, production strategy, and planning quickly. Prompt decisions about production and planning logical product runs would aid in reducing downtime on manufacturing equipment and reduce inventory. These attributes would contribute to companies achieving the competitive advantages needed in an international business environment. Xu (2011) indicated support and provided important technologies such as MAS as an ideal system for companies to use to achieve a competitive edge, but MAS is very costly. Some companies lack the ability and willingness to invest in these costly, theoretically proven systems, and the companies have no trust to share sensitive company information with supply chain partners. In addition, the assumption is that MAS include difficulty to implement, because the system usually has to go through several iterations because of the different countries that have to use the system, the differences in cultures, and the different software used to accommodate previously used systems. MAS can be a costly endeavor.

In an attempt to ensure an organization will gain the competitive advantage in a global market, a company's operational and production strategy for launching a new product should include well-established communication within the manufacturing chain, clear directions, establish goals, and the ability to adjust to demand change. MAS have the potential to provide these special features for a new product and production system. For example, ideally, the MAS would communicate with the appropriate entities that would make modifications to accommodating the changes needed to meet customers' demands. Although, manufacturing chain members must establish a trust that shared information is confidential and establish concrete rules to govern the information sharing. Trust is sometimes difficult to have when dealing with various countries, which have various governing laws regarding trade secret protection and intellectual property. Although these challenges are there, Hilletoft, Eriksson, and Hilmola (2012) provided evidence that demand manufacturing chain management much have systems such as MAS and information sharing among manufacturing chain members is necessary to have a profitable business.

International Manufacturing Chain: Cultural Differences

Bask, Halme, Kallio, and Kuula (2013) identified the need for cross-cultural managers for international manufacturing chains. Winter and Knemeyer (2013) touched on how cultural differences affect the operational performance of international manufacturing chains. Angell and Klassen (1999) also examined international operations and best practices to develop several questions for additional research. Questions are: (a) are there international standard of best practices for operations management; (b) how to

adapt international best practices to other countries; and (c) is a standardized or customized approach better for international operation management? Gavronski et al. (2012) provided evidence that supports Angell and Klassen's proposed research agenda, based on strategic decisions, to support changes to operational practices.

Clampit, Kedia, Fabian, and Gaffney (2015) investigated the nature of cultural differences in offshore outsourcing arrangements and examined the relationship between those cultural differences and offshore outsourcing success. The results of the research indicated that cultural differences do influence offshore outsourcing success (Clampit et al., 2015). A transparent definition of roles and procedures, strong leadership, and active management of culture by changing to either the client's or the vendor's national culture appeared to be effective ways to manage cultural differences (Clampit et al., 2015).

Literature exist that include discussion regarding change management and effective implementation, but limited literature exist that include discussion regarding how to implement change within cross-cultural organizations. Winter and Knemeyer (2013) outlined strategies to use for the successful implementation of changes, communication vehicle, analytical processes, planning and control aids, and a method of defining complex organizational environments. The publication provides a guideline, but it does not provide information on how to deal with cross-cultural change.

A common theme, trust and the ability to share knowledge, developed for the evaluation of international manufacturing chain relationship. High-quality relationships develop very similarly to new product development for the marketplace. The development of a new product is evaluation, testing, and a plan of action. Receivers also

known as providers evaluate each other to gather information and form an impression.

Validation of the impression is a necessity. Based on the test results, the development of relationships begin or never start.

Providing cultural training so that people have an understanding of other cultures and beliefs helps to accomplish relationship building within an international organization. Furthermore, the training should include conflict resolution (Shen-Miller, Forrest, & Burt, 2012) within various cultures. The unique challenge of building relationship among varying cultures is that a full understanding of cultures cannot be obtain just from studying. Cultural experiences are the best way to understand a culture. With this experience, some mistakes happen, which may lead to conflicts. An effective leader must have conflict resolution skills, and these skills vary from culture to culture.

Adaptive leadership embraces followership concepts. Adaptive leadership is a component of the complexity leadership theory, which encourage the learning, creative, and adaptive capacity of complex adaptive systems (CAS) (Dinh et al., 2014). Adaptive leadership encourages innovation, creativity, and empowerment, which are principles of participatory leadership (Yukl & Mahsud, 2010). Many company leaders continue to use these principles to meet the growing challenges of maintaining competitive advantages in the 21st century.

As corporations became more socially responsible, strategic leadership evolved to include environmental concerns and consideration. Company leaders learned that supplier relationships could be further use to secure broader objectives other than organizing the flow of supply materials such as developing lean and green manufacturing chain

members (Hajmohammad et al., 2013). Some manufacturing chain members encourage green (environmental awareness), which can be encouraged through strong supplier relationships. Positive manufacturing chain relationships can encourage green throughout its supply chain by investing time and potential money to aid smaller partners with the qualification for the environmental certification (Hajmohammad et al., 2013). These efforts would show commitment to one another and eliminate the thought of opportunistic behavior.

The role of strategic leadership in organizations is very important. A clear vision and implementation of the plan to achieve the vision make for a successful company, which can be adaptive and achieve competitive advantages (Carter & Greer, 2013). Top management must exemplify strategic leadership, as well as low and middle management to show cohesiveness between all levels of management (Carter & Greer, 2013). This cohesiveness will aid in achieving the vision, profitability and competitive advantage (Carter & Greer, 2013).

Generation X demands that businesses be dynamic and ever changing (Li, Chen, Liu, & Peng, 2014). Dynamic leadership is a requirement to achieve or maintain competitive advantage (Li et al., 2014). Leadership will need to be open to ideas, fast moving environments, and the ability to change quickly with the environments (Li et al., 2014). Within the 21st century, many situations continue to call for a horizontal leadership, the empowerment of the followers/subordinates and leading by example. Wagner, Ullrich, and Transchel's (2014) study provided insight into the need for more research to address the dynamic, complex, multifaceted, and sometimes nuanced issues

for manufacturing chain decision makers to meet stakeholders' requirements and demands.

Summary and Transition

Section 1 was an introduction to the general business problem that emerges from the outsourcing of U.S. manufacturing to international sites and the non-productive cross-culture business relationships between sites. Literature existed that supported the conceptual theory, capability-based view, information sharing, resource management, and trust, which contribute to increasing profitability, competitive advantages, recognition, and application of strategic supply management. The focus of the study was to explore strategies to improve profitable cross-cultural business relationships.

The next two sections provide details for the project, findings, and applications to professional practice, and conclusions. Section 2: The Project includes the role of the researcher, participants, the research method and design, population and sampling, ethical research, data collection, data analysis technique, and reliability and validity. Section 3 is the conclusion of the study, which includes the findings of the study, applications to professional practice, the implication for social change, recommendations for action, recommendations for further study, and reflections.

Section 2: The Project

Business leaders in manufacturing lack strategies to improve the cross-cultural business relationship, which may negatively affect profitability. The purpose of this section is to explore strategies to overcome the business challenges experienced by manufacturing leaders of Fortune 500 companies. This section includes details of the study's participants, method and design, sampling procedure, collection technique, and analysis. The section also includes information regarding the consent given by the participants and the company and the reliability of the data collection instruments and process for the study.

Purpose Statement

The purpose of this qualitative single case study was to explore strategies that manufacturing business leaders use to improve cross-cultural business relationships within their manufacturing supply chain. The targeted population included business leaders, fluent in English, within one company and located in two different manufacturing sites, the Midwest region of the United States and Northeast region of Mexico, who implemented successful strategies to improve cross-cultural business relationships. The implication for positive social change included the potential to provide information to improve profitable relationship building that overcomes the challenges of trust, information sharing, and resource management among cross-cultural manufacturing sites.

Role of the Researcher

Researchers using a social constructivist view use the interactions with people, places, and the researcher perspective versus separating them to explore theories (Brunero, Jeon, & Foster, 2015). My experiences as an engineering supervisor provided a unique lens through which to interpret meanings from the participants within the business environment. My relationships and mutual backgrounds with the participants helped to make them comfortable with speaking openly.

A researcher's role is to protect the participants both morally and ethically (Obenchain & Ives, 2015). Per the Belmont Report, the three basic ethical principles are respect for persons, beneficence, and justice (Obenchain & Ives, 2015). Respect for persons means treating a research participant as an independent person capable of making wise decisions regarding participation in the study when provided adequate information about the nature, purpose, and requirements of the study, and that participation is voluntary (Obenchain & Ives, 2015). Beneficence means to treat the participant with kindness and to not cause harm (Obenchain & Ives, 2015). The researcher should not ask a participant to join a research study where there is an expectation of harm to the participant or society (Obenchain & Ives, 2015). Justice means that no participant or group should benefit from or bear the burden of the risks of participating in a research study (Obenchain & Ives, 2015). For this study, I conducted interviews with the permission of the participants, the manufacturing business leaders, and their organization. The participants' identities and oral and written communication remained confidential.

Interviewing the participants provided the data for the study (Baxter & Jack, 2008). I conducted interviews in person or using teleconferencing. The study was not disruptive to the participants. During the interviews, I transcribed the participants' responses. Using NVivo11, an analysis of the gathered data provided themes and patterned regularities (Marshall & Rossman, 2014).

There should be no bias in writing, no falsifying of findings, no exploitation of colleagues, and no secrecy of the research detail (Miyazaki & Taylor, 2008). I am an employee of the participating company, which suggests the possibility of bias. I mitigated bias by following an interview protocol with each interview. I asked the same questions, in the same order, in the same type of interview setting, during the same amount of time, and every participant saw the typed responses.

Participants

The participants for this study included manufacturing business leaders, fluent in English, within one U.S. Fortune 500 company using a site located in the Midwest region of the United States and the Northeast region of Mexico. The participant eligibility criteria included business leaders who have implemented successful strategies to improve cross-cultural business relationships. By means of a Letter of Cooperation (Appendix B), the company's legal department granted access to the company and individual participants. After receiving permission to conduct the study, I purposefully identified a group of managers and supervisors, fluent in English, to volunteer as participants in the study.

I had worked with the participating company for the past 10 years. I built an extensive network of colleagues within the company and its manufacturing group, and this network provided participants for the study. I established relationships with each member through meetings; each meeting had a different agenda. First, each potential participant received an e-mail, which included an introduction to the study and a consent form. After identifying the participants, I scheduled meetings to conduct the study.

The research question was: What strategies do business leaders in manufacturing use to improve cross-cultural business relationships with their manufacturing employees? The chosen participants were manufacturing business leaders within their company from the Midwest region of the United States and Northeast region of Mexico. The participants work within cross-cultural manufacturing chain and has implemented successful strategies to improve cross-cultural business relationships.

Research Method and Design

The research method and design of the study was a qualitative case study. Qualitative case study explores the study's theory in order to confirm, challenge, or extend the theory (Baxter & Jack, 2008). Qualitative case study used a holistic approach, which represents both a typical and revelatory case, where the researcher has an opportunity to observe and analyze a trend previously inaccessible to social science inquiry (Yin, 2014).

Method

The chosen research method for this study was a qualitative study. The qualitative method allows the exploration or description of a trend in context using a variety of data

sources, which may include but are not limited to interviews and direct and participant observation (Baxter & Jack, 2008). The qualitative study also supports a participatory worldview, to examine change through observational research (Babbie, 2015). The qualitative method permitted the exploration of individuals or organizations through complicated interventions, relationships, communities, or programs (Baxter & Jack, 2008; Yin, 2014). Baxter and Jack (2008) also supported the deconstruction and the reconstruction of various phenomena. Yin (2014) confirmed Baxter and Jack's (2008) approach to a qualitative study on a constructivist paradigm, which claims that truth depends on one's perspective. This paradigm includes the recognition of the importance of human interpretation through a close relationship between the researcher and the participant that enables participants to relate their experiences.

Possible research methods for the study were quantitative and mixed methods. The quantitative and mixed research methods validate a theory and do not examine a trend within its context using a variety of data sources (Baxter & Jack, 2008). The quantitative research method does not permit the participation of the researcher or allow for a participatory worldview (Baxter & Jack, 2008). The quantitative method does not permit research questions that explore the *how* and *what* of a subject (Baxter & Jack, 2008). For this study, the quantitative research method was not a good choice.

Mixed method research permits the use of both qualitative and quantitative methods. This method allows the study of both philosophical assumptions and validation of the assumption using the numerical data of traditional science (Mertens, 2010). The mixed method research supports the pragmatic worldview, which encourages the

development of a comprehensive research strategy by supporting as many research techniques as necessary, based solely on practicality, feasibility, and productivity as decided by the principal researcher (Onwuegbuzie & Corrigan, 2014). This worldview promotes the use of any available tools to the researcher in an effect to overcome the problem and create a working understanding or truth regarding the use and design to enable further research and refinement (Onwuegbuzie & Corrigan, 2014). The pluralistic nature of this worldview encourages the testing of particular hypotheses from many different angles (Onwuegbuzie & Corrigan, 2007). The mixed method was not a good choice of research method for this study because the method is a very rigorous and time-consuming, which goes beyond this study's scope of the exploration of theories.

Research Design

I selected a single case study design for this research. The case study design included consideration for the following reasons: (a) the focus of the study, research questions, are *how* and *what*; (b) the behavior of those involved cannot be manipulated in the study; (c) the researcher wants to cover contextual conditions because these conditions are believed to be relevant trends and contexts; and (d) the boundaries remain unclear between the trend and context (Yin, 2014). Baxter and Jack (2008) provided questions that can help to determine what the case is considering. Using those questions, the identified case for this study is best practices implementation among U.S. and internationally based manufacturing sites. The question provides definition and context, which bounds the case (Miles & Huberman, 1994).

The phenomenological design was not an option for this study because the phenomenological study includes exploration of phenomena and the phenomena's effect on humans; this study explored a trend within an activity over a designated period (Smith, 2015). The narrative research design explores individual lives, and the researcher retells the participants' stories, whereas this study is an exploration of theory and not a story (Smith, 2015). The grounded theory is a prolonged study of emerging themes of different groups that requires extensive research time for the study (Smith, 2015). I am working with a company, which will not permit an extensive research period of time.

Four types of case studies are the single case (holistic), the single case with embedded units, multiple case (holistic), and multiple case with embedded units (Yin, 2014). Various rationales exist for the using single case designs. The five prominent rationales are: (a) when it represents the critical case in testing a well-calculated theory; (b) where the case represents an extreme case or unique case; (c) when it represents a typical case; (d) when it is a revelatory case, where a researcher has an opportunity to observe and evaluate a trend previously unavailable to social science inquiry; and (e) when the study is longitudinal, looking at the same single case at two or more different points in time (Yin, 2014). Single case designs demand careful evaluation of the potential case to limit the chance of misrepresentation and maximize the access needed to collect the case study evidence (Yin, 2014).

A multiple case study enables a researcher the ability to examine the differences within and between cases (Yin, 2014). The goal is to replicate findings across cases. The multiple case study develops comparisons, which dictates the need to carefully choose

cases so that the researcher can predict similarities or predict contradictory results based on a phenomenon (Yin, 2014). According to Baxter and Jack (2008) and Yin (2014), multiple case studies can either predict similar results (a literal replication) or contradictory results, but for predictable reasons (theoretical replication). The multiple case study is a more robust and reliable qualitative study (Baxter & Jack, 2008).

The chosen research design was a single case study. A single case study allowed the exploration of the theory and provided the ability to confirm, challenge, or extend the theory. This single case study used a holistic approach.

Population and Sampling

The sampling method for the study was purposeful sampling. Purposive sampling of participants allows the gathering of meaningful data from individuals who have experience in the studied phenomenon (Trotter, 2012). Purposeful sampling allows a researcher to select the most productive sample to answer interview questions and use critical cases, such as subjects who have specific experiences (Cope, 2011; Hancock, Ockleford, & Windridge, 2009). Selecting a study sample is an important step in a research project because studying a whole population is not practical or ethical (Suri, 2011). “Purposive sampling, to a degree, emulates a representative sample” (Denscombe, 2014, p. 41).

The targeted population selected for this study included 14 manufacturing business leaders, fluent in English, of a company within the Midwest region of the United States and Northeast region of Mexico, who has implemented successful strategies to improve cross-cultural business relationships. Each potential participant received an e-

mail, which included an introduction to the study and a consent form. The participating company provided permission to interview employees via a letter of cooperation (Appendix B), which allowed the use of the company's database to find participants' e-mail addresses. I solicited for participants until reaching the study sample size.

For a qualitative study, an appropriate sample size is one that adequately answers the research question and helps to provide data saturation, when themes or explanations stop emerging from the data (Suri, 2011). The required number of participants can be in the single digits for a study that asks simple or very detailed questions (Suri, 2011). The sample size for this study was eight manufacturing leaders from within one company and located in two different manufacturing sites, the Midwest region of the United States and Northeast region of Mexico. Data saturation is necessary for a complete study (Yin, 2014). Data saturation occurs when no new categories, themes, or explanations emerge from the data (Marshall & Rossman, 2014). In this study, I used three data collection techniques, interviews, direct observations (site visits), and production documentation, to reach data saturation and allow the emergence of themes. I continued to make site visits to observe the cultural interactions among the manufacturing business leaders, review documents, and conduct interviews until no new themes emerged.

The eligibility criteria for participants of the study were that they were business leaders, fluent in English, who worked within one company and located in two different manufacturing sites, one in the Midwest region of the United States and one in the Northeast region of Mexico, and who has implemented successful strategies to improve cross-cultural business relationships. The site of an interview is important, the time for

the interview must be at the participant's convenience, and the setting must be comfortable and provide the participant with a sense of control (Doody & Noonan, 2013). I conducted both the U.S. and international teams' interviews via a telephone call, which allowed the participant to select a private location at their workplace to do the interview. I recorded the interviews using AGPtek Digital Telephone Sound Voice Recorder. The recorder recorded interviews that occurred over a landline phone. The digital recorder is the best recording option for landline calls because the recorder provides the capability to record the interviews and later download the interviews to a computer. My backup plan for recording the interviews was a cellular phone.

Ethical Research

A requirement for an ethical study is participants' consent, which is the result of establishing ethical guidelines with the participants (Obenchain & Ives, 2015). An individual consent form detailed the purpose of the study, the interview process, the voluntary nature of the study, the risk and benefits of the study, and the confidentiality of the study. The process started with an e-mail to each purposefully selected participant. The e-mail introduced the researcher and detailed the purpose of the study and eligibility criteria to participate in the study; the individual consent form was attached (Appendix A). The e-mail concluded with the following statement: If you agree to participate in the study, please respond back to the e-mail with your approval per the instructions on the consent form.

Before conducting interviews, the participant e-mailed their approval per the consent form directions to the researcher. At any time, a participant could withdraw from

the study, such as if a participant experiences any stress during the study. There were no incentives offered to the participants for volunteering to participate in the study.

Researchers must protect the identity of participants (Resnik, 2011). Per Walden's research guidelines, each researcher must obtain a National Institutes of Health (NIH) certificate, which requires the researcher to protect the identity of all participants in a study (Adinoff, Conley, Taylor, & Chezem, 2013). To protect participants' identity, I did not use their names in the research study. Instead, I assigned a letter and number to each participant.

In this study, the letter of cooperation established consent of participation between the company and the researcher (Appendix B). The letter of cooperation detailed the requirements the researcher must meet to use the company and its employees in the study. In addition, the letter of cooperation detailed the researcher's requirements for the company to meet. The company consent process involved two phases. In the first phase, the manufacturing director received an e-mail summarizing details of the study. The e-mail included information regarding the purpose of the study and requested permission to use individuals from the company as participants in the study. In the second phase, once the manufacturing director provided approval, the company legal department signed the company consent form, and I had permission to begin conducting interviews.

I will maintain the data in a safe for 5 years to ensure an ethical study. After 5 years, I will shred written data and destroy recorded data. The Institutional Review Board (IRB) works to ensure that researchers maintain the confidentiality of participants (Obenchain & Ives, 2015). The approval of the Walden University IRB (#02-19-16-

0182085) and the use of the Belmont Report's requirements ensured the protection of the participants' rights throughout the study process. To protect the participants and the company involved in the study, I did not use their names within the study. The participants' and company's identities are confidential.

Data Collection

Instruments

I was the primary data collection instrument for the study. The secondary data collection instrument was semistructured interviews. Semistructured interviews use predetermined questions, but the researcher is free to seek clarification (Doody & Noonan, 2013). The flexibility of semistructured interviews allows a researcher to explore themes that arise spontaneously (Doody & Noonan, 2013). According to Yin (2014), the data collection instrument for a qualitative case study are the interview questions, which are a set of substantive questions reflecting the interviewer's actual line of inquiry. The interview questions facilitated the identification of a list of sources of evidence, guide the interviewer, and aid in the collection of data for the study. In addition, the interview questions are reminder for the interviewer in regards to the information that needs to be collected and why (Yin, 2014). The interviewer used the interview questions to facilitate the interview with the participants.

For this study, interviews included a one-hour meeting to gather data from both the domestic and international manufacturing members. The interview protocol included the interview questions and the procedure for conducting the interviews (Appendix C). The concepts explored by the interview questions are the effects of cultural differences

within business relationships in an international manufacturing chain. The questions also included the exploration of the relationship building process, information sharing, management, and culture between the U.S. and international manufacturing sites. The interview questions explored and provided findings to address the challenges of cultural differences in business relationships.

Bias, poor recall, and poor or inaccurate articulation can affect the validity and reliability of the interview questions (Yin, 2014). Peer expert reviewers in the field should review the interview questions to overcome these challenges and provide a method of validation (Zarbin, 2014). For this study, legal and subject matter experts reviewed the interview questions before signing the Letter of Cooperation to ensure the questions were reliable and valid (Appendix B). Member checking also ensured reliability and validation (Marshall & Rossman, 2014). I also used member checking to ensure reliability and validation.

Data Collection Technique

Methodological triangulation is the most common type of triangulation (Heale & Forbes, 2013). Methodological triangulation can use more than one type of method to study a phenomenon (Bekhet & Zauszniewski, 2012). The two types of methodological triangulation are across method (mixed methods) and within method (qualitative or quantitative not both) (Bekhet & Zauszniewski, 2012). Within method used two or more data collection techniques, multiple sources of data (Bekhet & Zauszniewski, 2012). I used the within method triangulation type for this research study. I used three data collection techniques, interviews, direct observation (site visits), and production

documentation, to validate my study. Per the Letter of Cooperation, the company agreed to provide access to the company documents and participants (Appendix B).

Methodological triangulation assists to achieve data saturation (Yin, 2014).

I conducted the U.S. and international manufacturing site interviews using a telephone. I also recorded the telephone interviews using an AGPtek Digital Telephone Sound Voice Recorder. The recorder connected to the landline phone and recorded the interviews while we talked. My backup plan for recording the interviews was a cellular phone. An hour was scheduled to conduct the interview with each participant. The second meeting was member checking, which allowed the participant to review the taken notes and ensure the notes reflect the participants' ideas. The member checking meeting occurred one week after the interview.

For this study, member checking occurred to help ensure accurate data interpretation. Member checking is participant verification used to improve accuracy, credibility, and validity (Harper & Cole, 2012). During member checking, the participant reviewed the summarization of their responses for accuracy and provided additional comments regarding the questions. Member checking establishes rigor (Houghton, Casey, Shaw, & Murphy, 2013). Member checking also helps to ensure data saturation (Yin, 2014).

Direct observation is the existence of phenomena in which many significant observed events support scientific discovery (Wynn & Williams, 2012). Direct observations provide additional supporting evidence in a study (Christiansen, Qureshi, Schaible, Park, & Gittelsohn, 2013). For this study, I conducted direct observations

during two site visits, one site in the Midwest region of the United States and the second site in the Northeast region of Mexico. I visited each site for a total of 24 hours over a 4-week period. I observed managers and supervisors during their manufacturing planning and execution meetings. I obtained a list of manager and supervisor meetings from the plant managers to attend. During these meetings, I took field notes regarding the business relationships and culture among the meeting participants (Appendix D).

Document review is the review of relevant documents used to provide evidence to support the exploration of phenomena (Rohwer, Willems, & Young, 2015). Document review also has the potential to help with the analysis of data, the development of themes (Rohwer, Willems, & Young, 2015). For this study, a review of company documentation occurred. Documents noted are production documentation, which included production rates and values, scrap, and cost. The production documentation validated information from the interviews. The Letter of Cooperation obtained from the company provided access to company documentation needed to conduct the study (Appendix B).

Methodological triangulation, which allows more than one data collection technique, included advantages and disadvantages. The advantage of using multiple data collection techniques is the ability to use more data sources, which provides a better opportunity for validity and reliability of a study (Bowden & Williams, 2013). The interviews allowed the participant to speak freely in private, and there is a time limit placed on the interview, which does not take up large amounts of the participant's time. The direct observation and company documentation allowed the ability to obtain more data without interfering with the participants. The disadvantage of the interview data

collection technique is the potential for not getting the participant to trust and provide true answers and miscommunication (Carlson, 2010). For this study, the interpretation of spoken words caused some miscommunication, and the cultural differences caused some trust issues.

Data Organization Techniques

The organization of data helped to lead to the coding of data (Baxter & Jack, 2008). Participant's identities are confidential information (Resnik, 2011). A unique code identified each participant to protect the participants' identity and information from disclosure. Each participant included a code or assignment of a letter and number such as M1 to represent managers, S1 to represent supervisors, and E1 to represent supervising engineers. All notes and recordings only contain the participant's unique identifier. I kept all written interview notes and site visit, field observation notes in a research journal. Written journals provided the potential for enhancing the interpretation of data collected (Friedemann, Mayorga, & Jimenez, 2011).

I recorded the interviews and took notes during the interview. I will maintain the recorded interviews and written and electronic notes in a secure location for 5 years. The electronic files are password protected, and the written notes stored in a locked file cabinet. After 5 years, written notes will be shredded and electronic files deleted from the computer.

Data Analysis Technique

Methodological triangulation allows the use of various data sources such as interviews and observations to conduct the analysis (Bowden & Williams, 2013). I used

three data collection techniques, interviews, direct observation during site visits of business relationships and culture, and production documentation for profitability, to conduct the data analysis and provide methodological triangulation for this study. Methodological triangulation would also help to achieve data saturation and validity of the study.

Using the gathered data, I analyzed the data for themes and patterned regularities using NVivo11. NVivo is the most used Qualitative Data Analysis Software for interpreting qualitative data for themes (Woods, Paulus, Atkins, & Macklin, 2015). NVivo is a program used to analyze all forms of unstructured data, which qualitative data usually do not contain numbers that need calculation (Woods et al., 2015). The findings are in a narrative presentation, helpful for research writing. Each participant and the community stakeholders received a 1 to 2-page summary of the results and findings.

The research question is the first step to help organize data, which helps to lead to the coding of data (Baxter & Jack, 2008). Using the interview questions, themes developed from the study, and categorization and coding of the collected information occurred. Analysis of the data will provide themes and patterned regularities (Marshall & Rossman, 2014). Theme analysis aims to examine narrative materials from experiences analytically by breaking the text into small units of content and submitting to descriptive treatment (Vaismoradi, Turunen, & Bondas, 2013). Theme analysis involved a search for relationships among domains and how relationships link to the context (Onwuegbuzie Leech, & Collins, 2012). I analyzed the data of the study for themes. The fundamental themes of the data analysis correlate to the study's conceptual framework, capability-

based view, and correlated to develop strategies to build effective business relationships among international and cross-cultural manufacturing supply chains to create profitability and competitive advantage.

Reliability and Validity

Reliability

Member checking allows participants to review the interpretation of their raw data (Carlson, 2010). This study used member checking to address dependability of this study. Member checking and the solicitation of participants' views of the credibility of the findings and interpretations are strategies that also provide reliability of a case study (Harper & Cole, 2012). Member checking ensured that the researcher accounted for evolving context within a research setting (Carlson, 2010). During the second meeting with the participants of the study, member checking occurred. The participant reviewed their typed responses and any additional comments added from reviewing the taped interview. Member checking (Harper & Cole, 2012) and methodological triangulation (Bowden & Williams, 2013) helped to reach data saturation. Using member checking and methodological triangulation helped to ensure that no new theme emerges.

Confirmability of the participant's participation and responses addressed by obtaining consent forms from each participant, and each participant signing their typed responses and notes added from the review of the taped interview. Bias, poor recall and poor or inaccurate articulation can affect confirmability of the interview questions (Yin, 2014). Peer expert reviewers in the field should review the interview questions to overcome these challenges (Zarbin, 2014). For this study, legal and subject matter experts reviewed

the interview questions before signing the Letter of Cooperation to ensure the questions were reliable, valid, and confirmable (Appendix B).

Validity

Triangulation allows decision regarding transferability and external audits (Curry, Nembhard, & Bardley, 2009). This study used methodological triangulation for validation of this study. Baxter and Jack (2008) recommended the use of triangulation as a validation strategy for qualitative case studies. Methodological triangulation used multiple and different sources to provide corroborating evidence (Bowden & Williams, 2013). Methodological triangulation used open coding to provide reliability, the stability of responses to multiple coders of the data set (Bowden & Williams, 2013). Methodological triangulation also helps to ensure data saturation, when interviews do not provide any new or additional information or insight into a research phenomenon (Yin, 2014). For the study, the use of interviews, which included member checking, direct observations (site visits), and production documentation facilitate obtaining data saturation. Triangulation of a case study is to help explain a trend, engage the reader so that they believe they are an active participant in the study, and determine whether the findings can apply to their situation (Baxter & Jack, 2008). Member checking also helps to ensure reliability and validity (Harper & Cole, 2012). Obtaining data saturation, the findings and generalizations of the study have transferability to future research to develop governing rules for building international business relationships.

Summary and Transition

Section 2 included the details of the research protocol and the gathering, analyzing, and validating of data for the study, which explored the strategies of cultural differences within business relationships in an international manufacturing chain. Section 2 also encompassed details regarding the role of the researcher, the participants, research method and design, the population and sampling, how to attain ethical research, data collection and technique, data organization technique and analysis, and reliability and validity. Section 3 includes the details of the project findings and applications to the world, the implication for social change, recommendations for action and further study, reflections, and conclusion.

Section 3: Application to Professional Practice and Implications for Change

Introduction

Business leaders in manufacturing seek successful strategies to improve cross-cultural business relationships within manufacturing supply chains. This section provides the strategies found to improve cross-cultural manufacturing business relationships. The section includes an introduction, presentation of findings, the applications to professional practice, implications for social change, recommendations for action and further studies, reflections, and conclusion.

The purpose of this qualitative single case study was to explore successful strategies that manufacturing business leaders used to improve cross-cultural business relationships within their manufacturing supply chain. The outsourcing of U.S. manufacturing to international sites led to nonproductive cross-cultural manufacturing business relationships, which caused manufacturing leaders to seek strategies to improve business relationships. The collection and analysis of the data from the semistructured interviews, production documents, and field observations provided data saturation, which resulted in four major themes with subthemes. The research findings highlighted four main strategies for improving cross-cultural business relationships: (a) clear, precise, and frequent information sharing; (b) creating common work tools to create a common technical language; (c) training; and (d) understanding cultural differences and practicing patience.

Presentation of the Findings

The overarching research question for this study was: What strategies do business leaders in manufacturing use to improve cross-cultural business relationships? The four core themes that emerged were: (a) information sharing, (b) creation of common work tools, (c) training, and (d) understanding cultural differences. Within the core themes, subthemes emerged.

The four core themes reflect strategies created, expanded, and implemented to improve manufacturing business relationships. The information sharing strategy includes the subtheme trust, which leads to continuous communication. The creation of common tools expands on the use of business tools to create common business language and standards and includes the subtheme of business practices. The subtheme that emerged out of the both the information sharing strategy and the creation of common tools was the establishment of measureable, executable goals, requirements, and expectations. Training facilitates the implementation of new tools and learning and application of new business practices. Understanding cultural difference as a strategy is one goal of the training strategy. However, understanding cultural differences encompasses a human variable, which can be difficult to measure.

Information Sharing Forms Strong Relationships

Information sharing was the key theme and strategy that emerged from the data analysis upon data saturation. Bardy (2012) identified the biggest risk to successfully using cross border manufacturing chains as the lack of trust. Bayat et al. (2014) provided evidence that supports that trust and strong partnerships have an effect on manufacturing

chain performance. The participants agreed that they trusted one another within the manufacturing chain, because they operated within the same company, which provided contractual guidelines and regulations for information sharing. In addition, building personal relationships, getting to know each other on a work and personal level, built trust between individuals. Establishment of trust is necessary before relationships or information sharing can begin. Establishment of trust occurred when parties knew they received good information (Ozer & Zheng, 2014).

All the participants agreed that continuous communication is the key to ensuring information sharing and there is a clear understanding requirements and expectations. Understanding requirements and expectations is another subtheme of information sharing. Matus et al. (2012) discussed the establishment of a clear, measurable, executable, globally accessible definition of sustainability, and the need to remove barriers and build cross-functional processes. The development of goals and scorecards provide clear, accurate, and measurable metrics that match business goals and customer expectations. Goals and measurable results help the management team to understand and believe in the business plan and align plant strategies. Roh, Hong, and Min (2014) supported continuous reporting (communication) as one key factor for a successful implementation of sustainability strategies.

Daily, weekly, biweekly, monthly, and quarterly meetings provided continuous communication to every level of the plant. These meetings allowed communication of daily priorities, activities, and issues and led to monthly goal evaluations. In addition, electronic information sharing, daily electronic reports, e-mails, and instant messages

allowed for continuous information exchange from providing solutions to problems to brainstorming ideas. In addition, site visits supported the theme of information sharing. Site visits are visitations of a manufacturing partner to another manufacturing partner site for a specific amount of time. Site visits, where face-to-face meetings occur, facilitate knowledge sharing. During these visits, manufacturing partners train each other, brainstorm and troubleshoot issues, and shared best practices, which can sometimes be practices undocumented but known from experience.

The complexity of combining various manufacturing members into one system requires continuous communication to coordinate decisions and behaviors (Larsen et al., 2013). The capability-based view theory, used to create the conceptual framework for this study, supports knowledge sharing, trust, and strategic management, which creates the ability to use capability assets effectively. The capability-based view details knowledge sharing routines, complementary resources, and effective governance (Dyer & Singh, 1998; Paulraj et al., 2012). The capability-based view includes the importance of business practices, top management support, relational governance, and interorganizational communication for improving business performance when using outsourcing (Paulraj et al., 2012). Per the findings, information sharing along with trust is a strategy that can be used to form strong partnerships, which improves cross-cultural manufacturing business relationships.

Common Tools Facilitates Common Technical Language

All eight of the participants agreed that the use of common business tools created a common technical language, which helped to communicate requirements and

expectations and establish measurable goals within a cross-cultural manufacturing chain. Although researchers presented compelling arguments that Six Sigma and Lean can provide competitive advantages within a localized supply chain, researchers did not show if these same tools or management strategies could be beneficial to a cross-cultural manufacturing chain. Examination and conquering of obstacles and challenges, such as issues in strategy, organizational culture, and training, is a necessity for successfully using the business methods and tools (Krueger et al., 2014).

In contrast, Timans et al. (2012) found that the adoption of a systemic approach is necessary when implementing the combined principles of Lean and Six Sigma to achieve homogeneity. Six Sigma evaluates the variability of a process, and Lean evaluates the length of a process and eliminates redundancy. The development and use of methodologies of Six Sigma and Lean and other newly developed business systems help to facilitate the creation of a homogenous business and communication system. Location of the business methodologies, tools, and results are within the company's documentation systems and databases and accessible to all manufacturing members.

All the participants agreed that commonalities created by using the program tools created a common technical language, which aided information sharing and provided trusted information. Manufacturing members in a global company need to create a global communication language. Didonet and Diaz (2012) determined a strong relationship existed between effective manufacturing chain management and information systems (communication) that had a positive effect on operational performance. Didonet and Diaz

indicated the need for a homogeneous communication system among manufacturing chain members.

Gotel et al. (2012) indicated that communication tools need more emphasis than engineering tools, especially across cross-cultural manufacturing chain members. Gotel et al. also indicated that trust is necessary for the adoption of new tools. The use of common technical tools and language also aids the overcoming of the cultural difference of spoken language and provides process understanding. One participant stated: “Six Sigma and Lean are tools used to create clear, precise, and consistent information sharing. The tools help to provide objective results, learnings, and common technical language between people and various sites.” Chiarini (2013) and Psomas and Kafetzopoulos (2014) supported the idea that developed standards that integrate into manufacturing supply chain can be opportunities for profitability. Braglia and Frosolini’s (2014) study provided evidence that having common business processes and tools helped to create a common language that supported manufacturing supply chains management. Braglia and Frosolini provided an example of a successful application of the adoption of the common processes and tools, shared communication, and software tools within a shipbuilding industry.

Using common business tools led to the development of documented and stored best business practices. Best business practices are a subtheme of the development of common tools and technical language. These stored best business practices are the roadmap for other manufacturing chain members to use to prevent pitfalls in manufacturing. The accessibility to a common database allows for the storage of suggestions for improvement, visibility, and accountability. Chan, Swarnkar, and Tiwari

(2007) argued that multi-agent systems (MAS), such as the accessible databases created for the manufacturing chain members, helped: (a) to synchronize activities and create a corporate presence; (b) to create communication; (c) globalization via networking; (d) to increase collaboration and development; (e) improve information retrieval and use; and (f) improve transmission of data. The implementation of manufacturing chain management and business techniques within the processes of manufacturing chain partners is a necessity for a company to be successful (Sabir & Irfan, 2014). Gavronski et al. (2012) provided evidence that organizational learning and knowledge systems have an influence on sustainable operations.

The development of common tools and technical language remains relevant to the relational capabilities, which capability-based view theory encompasses. The capability-based view includes three categories, transactional, translational, and relational supply chain management (Paulraj et al., 2012). These categories can foster relational capabilities, knowledge-based assets that can grow through cooperative relationships with manufacturing partners (Paulraj et al., 2012). Per the study's findings, the development of common tools and technical language is a strategy, which facilitates the improvement of cross-cultural manufacturing business relationships.

Training of a Common Business Tool(s) and Process(es)

A plan for conquering the obstacles and challenges such as issues in strategy, organizational culture, and training is a necessity for successful use of business processes and information sharing techniques (Krueger et al., 2014). Company training such as Lean and Six Sigma green and black belt training is important to get the techniques

taught to each manufacturing chain member. A trained representative from each site can go to their respective sites and implement their learnings. The results of the green and black belt projects include storage and documentation in a centralized company database, which allows information to be accessible to all manufacturing members.

Training also aids how local policies affect business relationships. Training personnel to handle foreign government policies facilitates business relationships by establishing parameters and expectations. For the company in this study, the company's legal department deciphered misunderstood foreign policies and sent instructions and training to personnel on the legal handling of the policies. Mehrizi and Schott (2014) contended that business leaders' learning is continuous and best obtained through networking for business knowledge. International education and training help to provide manufacturing supply chain learnings (Mehrizi & Schott, 2014).

Training of business tools and processes expands knowledge-based assets, which supports the capability-based view theory. The capability-based view promotes relational capability and knowledge sharing, which is a strategy for improving cross-cultural manufacturing business relationships. In addition to promoting knowledge sharing, training of partners also increases understanding of goals, requirements, and expectations.

Cultural Differences

Per Clampit et al. (2015), cultural differences influence offshore outsourcing success. Clampit et al. supported changing to a universal culture to provide a transparent definition of roles and procedures, strong leadership, and active management of culture, which would furnish effective ways to manage cultural differences. Winter and

Knemeyer (2013) outlined strategies to use for the successful implementation of changes, communication vehicle, analytical processes, and planning and control aids. The creation of common tools and technical language promotes overcoming cultural difference by creating a universal business culture, which are findings of the study and supported by Clampit et al.

Five out of eight participants felt that cultural differences did not affect business relationships because the company's legal, ethic, and compliance rules provide a common tool to limit cultural differences effect on business relationships, which supported Clampit et al's (2015) findings that universal culture manages cultural differences. The same five out of eight participants stated that the company's Human Resources (HR) or legal department resolves cultural issues not addressed by the company's legal, ethic, and compliances rules.

The significant point from all the participants is the understanding that there are differences, culture or even personality, where the lesson is to learn to be patient and willing to learn and treat everyone with professionalism and respect. One of the participants stated that there are no cultural differences; however, there are different personalities, and he has learned to manage to the different personalities.

Applications to Professional Practice

This study's findings were significant to manufacturing business practices and the reduction of the information gaps regarding improving cross-cultural manufacturing business relationships. Manufacturing leaders can use the developed strategies and apply the strategies to diverse manufacturing chains. The findings of the study disclosed

manufacturing leaders' views within one company and two manufacturing sites, an U.S. and international site, regarding strategies for improving cross-cultural business relationships. These findings can also apply to various manufacturing industries and supply chains, which provides the opportunities to improve profitability through the use of outsourcing. With the increased use of outsourcing, internal and external, these findings might aid in improving information sharing, trust, and resource management.

Companies have to be financially viable in an increasingly competitive international environment, which leads to the business necessity to develop international manufacturing chains and partners (Pelegri & Bolance, 2013). International manufacturing chains and partnership provide price and cost benefits, improved quality and time delivery, and enhance companies' competitive position (Caniato, Golini, & Kalchschmidt, 2013). The findings from this study provide strategies for manufacturing business leaders to implement such as information sharing, the creation of common tools and technical language, and training, to improve cross-culture business relationship within manufacturing supply chains. Implementing the strategies might also provide the opportunity to gain access to resources not available domestically, as well as access to better technology, and improved customer service (Pelegri & Bolance, 2013).

Matus et al. (2012) discussed maintaining viable practices that will require a concert of efforts including industry-wide cooperation, governmental openness, and education reform. The study's findings also included details of how the establishment of trust is necessary to ensure that communication can begin, which leads to information

sharing and training. Information sharing is key to the success of a cross-cultural manufacturing chain.

Based on the conclusions and recommendations of this study, manufacturing leaders gain learnings regarding creating common work tools, which enable communication in the same technical language. Communication in the same language eliminates assumptions, which lead to miscommunication and missed goals and opportunities. Communication in the same language also helps to create trust, essential to information sharing.

The study findings revealed four major themes, which developed into strategies. One of the study's themes is an expansion of business knowledge. Based on the research outcomes, the study showed that the creation of common work tools, such as Six Sigma and Lean, and training within a diverse manufacturing chain could to create a common technical language, which can provide profitability and sustainability. The study results included the recommendations for implementation of the developed strategies and further research. Manufacturing leaders may find the study recommendations useful for understanding and implementing strategies for improving cross-cultural business relationships.

Implications for Social Change

Outsourcing prompted the exploration of how cultural differences influence the manufacturing industry and how to improve business relationships (Larsen et al., 2013; Pagnattaro, 2012). The research findings contributed to positive social change by developing strategies that pertain to cultural differences that promote relationship

building and encourage profitability. The study findings enhanced the existing information regarding manufacturing cross-cultural business relationships by providing a business process to create a common technical language, which enhances trust, communication, and information sharing among manufacturing supply chain members.

The study findings may add value to society by providing strategies to cover potential cultural differences such as spoken language and provide commonalities that can be use to provide understanding and trust. Data analysis indicated that understanding, trust, and information sharing helps to develop measurable goals and deliverable results. The findings supported the capability-based view theory, which supports outsourcing and the use of capability assets such as knowledge sharing, trust, and strategic management.

The findings apply to more than business, but also to the world. Information sharing, trust, the use of common tools and language, training, and understanding cultural difference can be use to create political partnership with various countries. The development of common world policies and business tools can help to facilitate improved political relationships.

Recommendations for Action

Company leaders never stop looking for information and opportunities that can help maintain and improve profitability. I pledged to inform pertinent company leaders of the study findings as they relate to business practices and improving cross-cultural business relationships. The study findings offered strategies that companies' manufacturing leaders can use to overcome the challenges of outsourcing and building profitable business relationships among cross-cultural manufacturing sites.

As the study findings showed, communication, development of common business tools and technical language, and training can increase information sharing among manufacturing supply chain members, which allows for the development of goals and achievable results. The establishment of a clear, measurable, executable, globally accessible definition of sustainability tears down walls and build cross-functional efforts, which leads to profitability (Matus et al., 2012). With the increasing demand for outsourcing and the need for companies to stay dynamic, manufacturing leaders can use the study findings to implement strategies to improve cross-cultural manufacturing business relationships.

This study might be beneficial to manufacturing business leaders and key community stakeholders. Each of the study's participants and the community stakeholders will receive a 1 to 2-page summary of the results and findings. My goal is to share the results of this study to broader audiences by presenting to other groups within the company and eventually to teaching the study's strategies to college students. I would like to use the study results as a teaching tool for business leaders and key stakeholder to ensure the use and implementation of the proposed recommendations.

Recommendations for Further Study

The focus of this study was to explore strategies manufacturing business leaders used to improve cross-cultural business relationships within their manufacturing supply chains. The targeted population selected for this study included business leaders, fluent in English, of a manufacturing company within the Midwest region of the United States and

the Northeast region of Mexico, who implemented successful strategies to improve cross-cultural business relationships.

The recommendation for further research is to include more than two manufacturing sites, which would provide more culture to consider and determine if the findings remain the same. Manufacturing supply chains can have at least two or more manufacturing members, and all the members are in different countries, which means different cultures. The expansion of the study to include more than two global manufacturing sites would validate the study's findings. Recommendations also include participants of various job levels in the study, which provide various work experience levels, to determine if the findings would be the same or different. An additional recommendation is to use a different research method and design for further study such as a multiple case study, which would further validate the study findings, or a mixed method, which would provide a theory and validate the findings.

The findings in this study included recommendations for future research on several topics, including the exploration of learning styles because of culture and the challenges of teaching business tools and application of these tools. Another recommendation for future research could be the exploration of culture influence on business and the implementation of new process strategies or the teaching and implementation of the tools and process strategies. The findings from future studies would include further exploration of the implementation of strategies that improve cross-cultural business relationships.

Reflections

Many Fortune 500 companies continue to move to outsourcing manufacturing to become more dynamic and competitive (Ellrum et al., 2013). Manufacturing business leaders continue to look for successful strategies to implement which could improve cross-cultural business relationships within their international manufacturing supply chains. These strategies may aid their manufacturing chains to provide competitive advantages through improved import and export tax expenses, profitability through foreign exchange rates and taxes, and reductions through reduced capital investment expenses, transportation cost, and inventory (Ellrum et al., 2013).

I had no preconceived ideas regarding the study topic, but I understood that challenges existed dealing with outsourcing. I worked hard to take an unbiased approach throughout the research process and relied on the data to address the research question. Although given my experiences as an engineering supervisor, my place within the process of interpreting meanings from the participants within the study allowed a unique lens to consider the manufacturing business world.

The study participants seemed to be very comfortable during the interviews being forthcoming with their responses, perceptions, and experiences. The site visits were very informative. The participants seemed to be comfortable and open during the observations. I was mindful to be impartial during interviews, as an observer in meetings, and during my review of documentation. Also during data analysis, I worked to be impartial while developing the themes and subthemes.

Two additions that I feel would have added more value to my study are the ability to interview the manufacturing director and have a site visit where all the manufacturing leaders involved in the study were in the U.S. manufacturing site. Interviewing the manufacturing director would provide an unique leadership lens to the study's problem because he views the problem from a non-contact level compared to a day to day handling of the problem. A site visit with all the study's participants in the U.S. manufacturing site would help to determine if all the participants would have still been comfortable outside their environment.

I gained new learnings while conducting and analyzing this study. I initially thought that the cultural difference theme would have had a significant influence on improving cross-cultural business relationships. I learned that creating commonalities and sharing information limits the influence of culture differences on business operations.

I also gained more insight into outsourcing and strategies to make outsourcing profitable and cultivate cross-cultural business relationships from conducting this study. The leaders in the participating company and the participants agreed that this study came at the right time. This research provides findings that may improve their strategies to enhance the success of cross-cultural business manufacturing relationships.

Summary and Study Conclusions

The rapid growth of international outsourcing requires that manufacturing business leaders use strategies to improve cross-cultural business relationships. This study included exploration of strategies manufacturing business leaders could use to improve cross-cultural business relationships within their manufacturing supply chains. I

used methodological triangulation to collect data using semistructured interviews, direct observations (site visits), and reviewing company documentation. Using the three collection techniques, data saturation occurred when no new information, explanations, or themes emerged from the data.

Using the interviews, member checking, and multiple data sources (site visits and document review), the study findings provided strategies to consider or implemented that manufacturing business leaders can use to improve cross-cultural business relationships. However, because of time constraints of this study and a single case study, this study is an exploration of strategies, and the study findings may not be able to apply to every manufacturing supply chain. The recommendations for action and further research, gained from the findings and conclusions of this study, may contribute further to manufacturing business practice and social change. Manufacturing leaders suggested strategies on how to improve their cross-cultural business relationship, which may improve their supply chain performance.

Four major themes with subthemes developed from the study. Analyzing the participants' responses, I learned that cultural differences does not have a significant impact on building cross-cultural business relationships. Two of the participants stated: "I manage culture as a personality, which in everyday life everyone has to manage various personalities." The research findings highlighted four main strategies for improving cross-cultural business relationships: (a) information sharing which forms strong partnerships; (b) creating common work tools which facilitates the creation of a common

technical language; (c) training of common business tools and processes; and (d) understanding cultural difference.

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Appendix A: Request for Interview E-mail

My name is DeLariah Jones, a doctoral student at Walden University. You know me as a division engineer, but this study is separate from that role. I would like to interview you for my doctoral study, *The Challenges of Cultural Business Relationships within Manufacturing*. The purpose of this study is to explore strategies manufacturing business leaders use to improve cross-cultural business relationships within their manufacturing supply chains.

You have been invited to participate in this study because of your knowledge of engineering management and its involvement in international manufacturing.

Please read the attached consent form for background information and procedure. If you agree to participate in the study, please respond back to this e-mail with your approval per the instruction on the consent form. Once I receive your approval, I will work with you to schedule an interview time convenient for you.

Best Regards.

DeLariah Jones

Appendix B: Letter of Cooperation

January 28, 2016

Dear DeLariah Jones,

Based on my review of your research proposal, I give permission for you to conduct the study entitled "The Challenges of Cultural Business Relationships within Manufacturing" within the company's [REDACTED] manufacturing sites. As part of this study, I authorize you to recruit the participants needed for your study, conduct interviews with the participants and member checking, conduct onsite observations, review product documents and present the results of your study to the participating plant managers. Individuals' participation will be voluntary and at their own discretion.

Our company understand that our responsibilities include: allowing the volunteers' time to participate in the study, the use of teleconferencing equipment, and no fear of retaliation for participating. We, the company, reserve the right to withdraw from the study at any time.

You will be responsible for complying with our company's research policies and requirements, including following our company Confidentiality Disclosure Agreement regulations and approval our company's technical publication board.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the DeLariah's supervising faculty/staff without permission from the Walden University IRB.

Sincerely, _____

Appendix C: Interview Protocol

First Meeting: Interview

Script: Thank you for being willing to participate in my study, *The Challenges of Cultural Business Relationships within Manufacturing*. The general business problem was that some business leaders in the outsourcing of manufacturing experience negative effects because of the lack of cross-cultural business relationships, which results in the loss of profitability. The specific business problem is that some business leaders in manufacturing lack strategies to improve cross-cultural business relationships. The purpose of this qualitative single case study is to explore strategies manufacturing business leaders use to improve cross-cultural business relationships within their manufacturing supply chains.

I will conduct this interview asking nine open-ended. Please speak freely and openly. I need your truthful answers.

Interview Questions:

1. What business climate, culture, management, and information sharing do you use at your manufacturing site to improve business relationships?
2. What strategies do you use to develop trust and share information within and outside of your manufacturing site?
3. What business programs, such as Six Sigma, do your manufacturing site try to use to improve trust and share information within and outside of your site?
4. How do your domestic culture, management, and information sharing differ from your manufacturing counterpart?

5. How does culture affect your business relationship if your culture, management, and information sharing differ from your manufacturing counterpart?
6. How do your local policies affect your business relationships?
7. What procedures and steps do you use to improve relationships when cultural differences are present at the manufacturing sites?
8. What rules do you use to improve a business relationship between differing manufacturing sites?
9. Is there anything else you would like to add that I might have missed?

(During the interview, I asked follow-up questions as needed. I typed the participants' responses while they responded to the interview questions. The participants were able to see the typed responses during the interview.)

At the conclusion of the interview, I thanked the participant for doing the interview. Script: Thank you for allowing time to do an interview with me and helping me with my study. I will need to schedule a second meeting to allow you to review your response. I will look on your calendar for a time to have this second meeting. Thank you again for your time.

Second Meeting: Member Checking

Script: Thank you for agreeing to a second meeting to validate your responses during the interview and reviewing notes taken by me. Please review the printed responses and notes and provide remarks/commitments/additions/changes. (I will give 2 minutes to read the responses and notes. We will use 3 minutes to modify the response or

note if needed and ask additional probing questions if needed. I will dedicate 5 to 6 minutes to each question.)

At the conclusion of the meeting, I thanked the participant for participating and their time. Script: Thank you for participating in my study and all the time you have given me. If you have any questions or concern regarding the study, please feel free to contact me.

Appendix D: Direct Observation Protocol

Direct observations were site visits conducted at two sites, [REDACTED]. I visited each site for a total of 24 hours over a 4-week period. I observed managers and supervisors during their manufacturing planning and execution meetings. I obtained a list of manager and supervisor meetings from the plant managers to attend. During these meetings, I took field notes regarding the business relationships and culture among the meeting participants.