The attached educational project, by Casey Forrer, entitled Implementation of 5S for an Ecommerce Distribution Center, when completed, is to be submitted to the Graduate Faculty of the University of Wisconsin-Platteville in partial fulfillment of the requirements for the (MASTER OF SCIENCE IN INTEGRATED SUPPLY CHAIN MANAGEMENT) degree.

Approved: [Signature]  Date: 5/1/17

Project Advisor
Professor Jason J Woldt

Suggested content descriptor keywords:

Supply Chain Strategy, Procurement,

Sourcing, Cheese Industry
A Paper

Submitted to the Graduate Faculty of
the
University of Wisconsin, Platteville By
Casey Forrer

in Partial Fulfillment for the Degree of

MASTER OF SCIENCE IN INTEGRATED SUPPLY CHAIN MANAGEMENT

Year of Graduation: Spring 2017

Developing a Supply Chain Strategy and how the Wisconsin Cheese Industry Can Utilize this Process

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Abstract

Developing a supply chain strategy is the road map that will evolve a corporation’s entire business. Cheese companies in Wisconsin are failing and closing due to not creating a supply chain strategy. Research explains four different areas that are needed to completely create a competitive strategy. This is creating a plan of action, sourcing, manufacturing and logistics. A roadmap will be developed to make a company successful. By focusing on the four parts of a supply chain you can develop the approach to the end goal. Wisconsin companies should utilize the steps to create a supply strategy to stay competitive in the cheese industry.
Supply Chain Strategy

Introduction

Wisconsin is known for three things which categorized as beer, football, and cheese. With this, Wisconsin is known mostly for the vast amount of cheese it produces to the entire United States. The cheese industry is one of the largest food markets in the country with a large amount of cheese coming from Wisconsin. Due to the large growth of the cheese industry there has been a change in strategy on marketing cheese. The framework of the supply chain set up of the Wisconsin Cheese industry has history back to the first generation of cheese producers in state.

An important part of business operations is the supply chain network strategy and design strategy. This design is created to make sure that a business can reach customers with the right products and quantities. This supply chain network is created to help a company have the right place, quality and price. To make a company competitive in today’s US market there are four parts to create a supply chain. First, is to develop a plan of action which looks at the whole picture and to develop an end goal. Second, a necessity is to create a strategy for strategic sourcing or raw materials. Also, an organization need to implement purchasing principles for raw materials, work in process (WIP) and finished goods. The third part is focused on manufacturing and the elements of traceability and quality control. Finally, the last part focuses on logistics and moving product to the end customer. With these factors a company can grow their supply chain by thriving in highly competitive markets. The challenge is to find the right market for the cheese industries supply chain that addresses the diverse development of the networks. (Khamsi, 2016)
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Once a supply chain strategy is developed the next part is to implement the overall design. By utilizing the four parts of a supply chain you can develop a strategic approach. Keeping a clear purpose a company can develop a concise tactical step to achieve this goal. The framework of the Wisconsin cheese industry’s supply chain dates to the first generation of cheesemakers. Due to the rapid growth of the cheese industry in the US new strategies need to be developed to keep Wisconsin competitive in the market.

The interest in Supply Chain Management (SCM) has been created by the channels of suppliers and customers with a unique source of competitive competences. Enterprise reengineering and operations have forced companies to evaluate the supply chain partnerships. This is caused by sharing between vendors and customers. The shift from mass production to flexible operations providing custom products. Effectively managing supply chains have become critical to competitive survival. (Ross, 1998) Companies in the cheese industry now need to focus their attention on the large picture of the entire supply chain. The dairy industry is a vertically integrated industry with both parts of the supply chain depend on each other to ensure safe food. In the past, the traditional model focused on large number of cooperatives and small membership. (Gohel, 2009)

Literature Review

Supply Chain Success

In a supply chain, there are four different parts that go into making a supply chain successful. These include, a business plan that frames your supply chain strategy. Second, procurement and sourcing of suppliers/customers. Third, strategic success in manufacturing and production. Fourth, is the delivery and logistic end of the strategy. One of the leaders on this was
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the author named J. Paul Dittmann. He found the critical value of supply chain. In his book, *Supply Chain Transformation and Executing an Integrated Supply Chain Strategy* he describes how thousands of US companies never consider supply chain strategies when developing businesses. He recognizes that to thrive in the market today supply chains require a strategic road map to streamline the flow of materials and information. His book lays out the guide to access the internal supply chain capabilities, evaluate supply chains, create a SWOT analysis by firming up the best practices, and notice large trends that impact the internal supply chain. (Dittmann, 2013)

**Strategic Planning**

Ditmann described four elements of a supply chain strategy. The first element is the strategic planning is the overall picture of the supply chain strategy. Ditmann explains that a supply chain strategy is a road map that starts with the needs of your customer. This evaluates a company’s weaknesses, strengths and opportunities.

Author Shoshanah Cohen wrote the book *Strategic Supply Chain Management: The Five Core Disciplines for Top Performance*. This book describes the increased pace of product innovation, and fast-changing customer needs that have impacted the supply chain profitability the last 10 years. This book focuses on the disciplines needed for companies to be the top performances in an integrated supply chain. Here, you see a focus on strategy and planning that goes into a strategic supply chain. (Cohen, 2013)

To see the entire picture of a supply chain, the book written by Eliyahu Goldratt and Jeff Cox titled *The Goal: A Process of Ongoing Improvements* focuses on the big picture of a supply chain. This book focuses on Johan’s fight to keep his plant open. There is a message for all managers in the industry and explains ideas, which underline the Theory of Constraints (TOC).
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(Goldratt & Cox, 2006) By developing an end goal of your company you would be able to develop a supply chain strategy that would work with your corporation.

Sourcing

Second, is the sourcing part of the supply chain. According to Ditmann, sourcing is another critical element of the supply chain. This focuses on where the product will be coming from to get to the manufacturing facility. The article titled Production and Inventory Management written by Rhonda R Lummus, Robert J Vokurka and Karen L. Albert described management of a supply chain comes from elements of strategic sourcing. A supply chain has many moving parts that focus on the material and information flow. These include sourcing from different elements such as suppliers, carriers, manufacturing sites, distribution centers, retailers and customers. Companies are noticing the importance of incorporating supply chain strategy in their strategic sourcing planning process. (Lummus, Vokurka, & Alber, 1998)

The article Supply Chain Management: Supplier Performance and Firm Performance explains the importance with the sourcing process within the supply chain. This article describes the relationship between supply chain management practices, supplier performance, and company performance. Furthermore, the results show that there is evidence that purchasing practices and customer relation practices are associated with financial and market success of company’s growth. (Tan, Kannan, & Handfield, 1998) Another article that focuses on supplier performance is titled: A Framework for Supply Chain Performance Measurement, which describes strategies and technologies for effectively managing supply chain. This article focuses on the performance measurement and metrics to Supply Chain Management (SCM). (Gunasekaran, Patel, & McGaughey, A framework for supply chain performance measurement, February 2004)
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The Purchasing Machine: How the Top Ten Companies Use Best Practices to Manage Their Supply Chain written by Dave Nelson, Patricia Moody, and Jonathan Stegner is a book that describes concrete and practical steps to strategic purchasing in a company. This book describes critical selection of the next stage of supplier development that will involve sourcing and allocation of ideas as well as the materials. (Nelson, Moody, & Stegner, 2001)

Third, a critical element of supply chain is the manufacturing, traceability and quality control of products. The article titled Unraveling the Food Supply Chain: Strategic Insights from China and the 2007 Recalls. This article focused on the pet food recall that happened in China in 2007. This article would give insight on the sourcing elements on supply chains that have low visibility and when these companies are vulnerable. A strategic framework is created that focuses around the “Six Ts” of supply chain management quality-Final stage is the logistic side of things. This focuses on the quality and importance of traceability, transparency, testability, time, trust and training. (Roth, Tsay, Pullman, & Gray, 2008) Another article that focused its attention on trackability was Traceability in the US Food Supply: Economic Theory and Industry Studies written by Elise Golan, Barry Krissoff, Fred Kuchler, Linda Calvin, Kenneth Nelson, and Gregory Pric. This investigates into the baseline in the United States and the private sector of food firms that help keep substantial capacity trace. The laws that are within the United States focus on company’s incentives to invest in trackability to keep food safe and the customers safe as well. (Golan, Krissoff, Kulchler, Nelson, & Pric, 2004)

In the article, Effective Supply Chain Management in Manufacturing Key to Revival of Industry in U.S. written by Adam Robinson focuses small manufacturing companies in the United States. This article states that production planning is not a straightforward process. However, the United States is learning from its mistakes and they are getting caught up to the
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world’s economy. The article describes the benefits of using United States workers instead of outsourcing jobs overseas. Also, the government is weighing in on supply chain management in manufacturing in the United States. The end goal is to keep companies in the US, which would boost profits in the United States and different sectors. Therefore, it is important that a strategy is developed on the location of the manufacturing facilities. (Robinson, 2015)

In the two books written by Louis Bevoc Supply Chain Management in Manufacturing and Inventory Control in Manufacturing explains how supply chain management has been embraced by many organizations today. The book focuses on the supply chain management in production. It lays out the phases of this system and the factors that are affected by it. The next step is to explore the goals and objectives that is established by management. (Bevoc, Supply Chain Management in Manufacturing, 2016) Furthermore, the second book focuses its attention on inventory control from a manufacturing perspective. There is an in-depth look at the methods available for performance inventory control and the explanation of systems that are used for recording raw materials and finished goods. (Bevoc, Inventory Control in Manufacturing, 2016)

Development of a Strategy

The final part of creating a strategic supply chain focuses on the logistics and getting product to the end customer. Paul Murphy and Michael Kremeyer wrote Contemporary Logistics, which describes the dimensions of the complex and dynamic subject of logistics. Part one of the textbook describes how logistics interact with divisions throughout an organization. Furthermore, part two examines the link between supply chain management and procurement by focusing the attention on the connection of logistics. Supply chain management focuses on business integration from logistics as well as other areas. The final part focus its attention on the
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elements of the logistic system. This examines the demand management, order management, and customer service side of things. (Murphy & Knemyer, 2015)

Once a supply chain strategy is developed the next step is to create a supply chain strategy. This gives companies a clear indication on what the end goal is and how to developed this goal. An article written by the UPS Supply Chain Solutions Company titled Supply Chain Strategy: The Importance of Aligning your Strategies focuses on the idea of the end goal of your supply chain strategy. (Happek, 2005) Designing & Managing the Supply Chain: Concepts, Strategies & Case Studies text goes into detail describing the core supply chain management issues and uses numerous examples to try to prevent these issues. Mathematical and technical sections of the supply chain are at risk of being skipped due to not looking at attention to detail. (Simchi-Levi, Kaminsky, & Simchi-Levi, 2011)

One way to develop a competitive supply chain is to examine case studies created by leaders in the industries. The article BUILDING A MORE COMPLETE THEORY OF SUSTAINABLE SUPPLY CHAIN MANAGEMENT USING CASE STUDIES OF 10 EXEMPLARS builds the case of previously research by examining the supply chain and explicitly focusing both on the social and environmental outcomes of the supply chain activities. This analysis suggest that certain practices lead to more solid supply chains are best parts focused in a traditional supply chain management style. (Pagell & Wu, 2009) Another article that focused on competitive strategies is Responsive supply chain: A competitive strategy in a networked economy. This article focuses on the SCM and Agile Manufacturing (AM) frameworks in a supply chain strategy. Considering the significance of both ideologies it is important for companies to improve their performance and to analyze both AM and SCM with the objective to develop a framework for responsive supply chain (RSC). This article compares the
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characteristics and objectives between the two structures. (Gunasekaran, Lai, & Edwincheng, Responsive supply chain: A competitive strategy in a networked economy, 2008)

Wisconsin Dairy Industry

When looking at the supply chain of the Wisconsin cheese industry an article that would help build the framework is Supply Chain Planning and Analytics: The Right Product in the Right written by Geral Feigin. This focuses on developing several models for the creating of the supply chain strategy. (Feigin, 2011) The first approach I would take to look at Wisconsin’s cheese industry is the history of cheese in the state. A book written by Jerry Apps titled Cheese: The Making of a Wisconsin Tradition tells the story of the farmers, milk with cows, dairy farms and the cheese industry. Apps explains the different kinds of Wisconsin made cheese and the current cheese producers, their factories and technologies. (Apps, 1998)

Steps that would be taken is to look at the different aspects of the cheese sales and different sides of the industry. The retail side of the cheese industry, which is product that is made for the stores and treated as the bolt-on separate business. Retail Supply Chain Management Trends written by Kumari Smriti explains how the retail is a conduction to manage the resulting complexity of pushing retailers to the new role where there is value of coordinating numerous supply chains. (Smriti) The article titled Consolidating in Food Retailing and Dairy discusses the restraint of the food production, processing and retail sectors in the US. Here, it goes in depth into consolidation of business in retailing. For example, the relationship between supermarket chains. (Hendrickson, 2001)

Body

Road Map of a Strategy
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the needs of your customers start with a supply chain strategy is a road map that. This needs to examine a corporation’s strengths, weaknesses, opportunities and threats. It must satisfy the financial goals of a corporation and the employees. Due to companies not focusing on the end big picture they end up failing because these corporations focus their attention on the latest trend. The supply chain is the heart of a company because it manages 60 to 70 percent of the operational cost. Also, it controls 100 percent of the inventory and lays the ground to revenue profit. Therefore, the supply chain process is a horizontal end-to end process that guides and seamless flow of product across the companies. (Dittmann, 2013)

There are many moving parts and elements when developing a strategic supply chain model. Supply chain strategies fail due to their execution and lack of multiyear road map. To create a competitive advantage. (Cohen, 2013)There are two attitudes when it comes to create a solid supply chain strategy. The first is that it is a simple matter and second that if it is an overwhelming effort many companies do not feel the need to spare the resources. (Dittmann, 2013)

There are two different approaches to focus on when creating supply chain strategy. The supplier forward approach is the first part which focuses on the capabilities of the company. Corporations focus on five steps which starts with accessing your supplier capabilities. Second, is to analyze the inbound flow of the facility. Third, focuses your internal operations. Fourth, analyzes the flow from the facilities to your customers. Finally, you need to determine how well you are meeting your customer needs. The customer needs approach starts with your customer needs and works backwards. First, you access your customer supply chain demands. Second, you design a flow to meet these needs. Third, you design your internal operation to meet customer
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requirement. Fourth, manage the inbound flow from supplier to support the operations requirements. Finally, you manage suppliers to support those needs. (Dittmann, 2013)

Majority of all corporations are going to go with the supplier forward approach because this focuses on determine supply chains best practices and developing a strategy to work with the vendor. (Dittmann, 2013) Various parts of the supply chain focus on the moving flow and information flow. This includes sourcing from different elements such as carriers, manufacturing sites, distribution centers, retailers and customers. Due to these different elements, any corporations are noticing the importance of gathering both supply chain strategy and the sourcing planning performance. (Lummas, Vokurka, & Alber, 1998) The problem that has arose from this mindset is that the first approach the customer comes in last.

Both approaches end up not working a company you need to create an innovative approach. To create a new, approach a company needs to assess your customers’ needs within the objective of designing a supply chain flow. Study and examine their internal operations and the supplier’s operations. This gives an organization the ability to identify the competitive trends and technology trends. Furthermore, a company needs to examine what kind of risk their supply chain would be linked to. Continuing to meet your cost and working capital targets. Finally, closing the loop will determine how well you are meeting your customer needs. (Dittmann, 2013)

Procurement and Sourcing

Once a company decides on their approach the first step of creating a supply chain strategy would be purchasing raw materials from vendors. This will create a concrete and
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practical step to a strategic purchasing department. The discipline of moving material has become a key strategic advantage that enables the idea of lean manufacturing and responsive customer focus. Opportunities for savings start at the far ends of the supply chain. A large issue starts with the excess inventory, waste in the process, inferior quality, and poor scheduling. The challenge arises to bring procurement into an equally powerful and responsive strategic position. (Nelson, Moody, & Stegner, 2001) A corporation would be able to develop the first step of a supply chain strategy by focusing on supplier performance. One way to do this is to focus on the performance measurements and metrics of a SCM. (Gunasekaran, Lai, & Edvinchng, Responsive supply chain: A competitive strategy in a networked economy, 2008)

The typical manufacturing company of today is focused more in the allocation process than in the business of producing product. Today, the typical manufacturer depends on enhancing the supplier performance to create a better quality of products. Enhancement of a supplier performance has become a large objective on an ongoing basis. This helps enable them to maintain a competitive advantage in the downstream markets. (Joshi, 2009)

Measuring supplier performance can help a company understand their organization to accomplish the end goal. This allows for an analysis where changes need to be made to improve performance and quality. By measuring the performance, companies can understand what is working well and information that could be shared within the internal company. Performance measurement is the collection of data to access whether the correct processes are being performed. The focus of performance measurement is less on a specific department and instead focuses on the whole structure.

There are many reasons why a company wants to measure performance. One of the reasons is for quality improvements. This can tell you what you are doing well so you can
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measure success and reveal areas where you need to adjust. This tells if the supplier is achieving the goal. Stakeholders want to know what kind of quality is provided and if a company wants to make the choice go move forward with your company. Once the performance review is done, the next step is to use the information to improve quality. This will provide a picture of a company’s organization’s quality and to see if there are any factors that measure results. (Bevoe, Supply Chain Management in Manufacturing, 2016)

External supplier improvement strategies use the external market to investigate supplier performance. Also, these strategies improve the competitive pressure, supplier assessment, and supplier incentives. Internal supplier improvement strategies are a direct investment from the buying company’s resources of the supplier. With the internal strategy, research has also focused on the role of collaborative communication to enhance supplier performance. Research has found that collaborative communication and control are two of the most common types of strategies. There have been prior research documenting the importance of both collaborative communication and control in the continuous supplier improvement efforts. However, there has been many gaps in these two drivers. (Joshi, 2009)

Control Theory focuses on the commitment between supplier and customer in the terms of action will undertake to achieve mutual goals. This role is to achieve the promised actions will be undertaken and ascertain that the relationship is moving closer to the desired goal. The two dimensions of control focus on information and reinforcement. These reinforces are focused on goal setting, monitoring and feedback with rewards and punishments. Which leads to collaborative communication is the communication between partners. This is in the lines of high frequency, large formality, reciprocal feedback, and using rationality as a means of attaining
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influence. Furthermore, this is described as a corporation who communicates with their suppliers on a frequent, formal and reputedly basis. (Joshi, 2009)

An important part of the supply chain strategy is building a supplier-customer relationship. A large amount of companies are advancing to a supply chain collaboration strategy known as Collaborative Planning, Forecast and Replenishment (CPER). This is when a supplier and customer share a forecast which drives replenishment to better satisfy demand. Working with the supplier and customer have shown great benefits. (Dittmann, 2013)

By utilizing CPER two companies work together often show a large amount of results. Strategy and planning define who relationship in terms of goal, scope, roles and responsibilities. This relationship leads to demand and supply management share a joint sales forecasting, market data, analysis and order/replenishment. Also, the order generation and fulfillment exceed both company’s execution. The use of scorecards creates an analysis that utilizes exception management, monitoring and joint performance assessments with. (Dittmann, 2013)

CPER is a utilizes external collaboration between a supplier and customer. The best ideology for internal collaboration is sales and operation planning (S&OP) is between in house functional silos. The main purpose of this collaboration is to accomplish cross functional alignment on a demand plan, supply plan and financial plan. This provides a framework for marketing, sales, merchandising, logistics, manufacturing, finance and procurement. Companies that implement S&OP have successfully integrated a supply plan that matches with the demand plan. To implement S&OP it requires a large amount of time and effort. (Dittmann, 2013)

Collaboration is both challenging and rewarding. By designing a process the technology is only half the battle. Companies that intend to implement a collaborative relationship needs to
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accept the idea that success depends on the culture of the company. A culture can support a foundation of trust between partners. External collaboration involves a trust that is between two different companies to overcome barriers that has happened in the past. Internal collaboration means the same thing and overcoming barriers that cause companies to compete against one another. Once companies overcome obstacles both external and internal collaboration create framework for a supply chain strategy, lower cost, achieve higher levels of inventory turnover, customer satisfaction, and enhance visibility. (Dittmann, 2013)

To align supply management with corporate objectives is important for a company’s supply chain. These objectives take place at four different levels. The first level is corporate strategies which is concerned with the definition of business in which the corporation wishes to participate. Also, the allocation of resources to these business units. Creating a business unit strategy is concerned with the scope of each business that links corporate strategies. Second, is the basis on which the business unit will achieve and maintain a competitive advantage in the industry. Third, the supply management strategy is part of a level of strategy developments called functional strategies. This gives the company the power to support the desired competitive business strategy and complement other functional stages. Final part, is the category/sourcing strategies that is specific on how a group tasked with developing strategies for a goal. This is where the term “commodity” is interchanged with the term “category” when referring to these strategies. (Monczaka, Handfield, Ginipero, & Patterson, 2014)

Category strategies need to include stakeholders as part of a team. The importance of a category marks a critical it is that internal stakeholder is involved. Together, a category team will develop a strategy that provides specific details and outlines for the actions of the section of the supply chain. Category management is not about putting a new veneer on strategic sourcing
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methodology. Instead this ideology comes when procurement can be viewed as a service provider. This becomes the procurement’s groups primary service line. Category management is an ongoing process that may be imitated through the review of stakeholder engagements and is focused on value elements that goes beyond simple price saving. Furthermore, category management creates strategic sourcing is a onetime event, that focuses on leveraging to drive down cost. (Monczaka, Handfield, Ginipero, & Patterson, 2014)

Inventory, Quality and Manufacturing

It is reported that there are over 230,000 small manufacturing companies in the United States. The supply chain for each manufacturer includes everyone associated with the product. It starts with the person who sources to the end customer. It is attractive to outsource jobs overseas. However, staying within your own company does not only give jobs to those with families but it also makes sense financially. (Robinson, 2015) The location is important when it comes to businesses. A company might want to save portions of their products manufacture. However, there are different rules and regulations in different countries.

By keeping manufacturing close to home is important that a supply chain strategy can have complete trackability over their product. Trackability systems are tools that help companies manage the flow of inputs and products to improve the overall efficiency, product differentiations, food safety, and product quality. Companies that balance the private cost and benefits of trackability can determine the efficient level of tracking products. The private sector has developed many mechanisms to correct the problem by adding third party safety/quality audits. This allows companies flexibility to determine the manner of recalls, increased penalties for unsafe foods and bio-terrorism. (Golan, Krissoff, Kulchler, Nelson, & Pric, 2004)
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When a company creates, a strategic planning process they need to decide whether to adopt the ideologies of Lean and Six Sigma techniques for their end-to-end supply chains. The Lean concept was invented by Toyota 60 years ago, and the pursuit of kaizen ever since. Six Sigma had considerable success in manufacturing companies since it consists of a set of tools that reduce variation and thereby defect in any process. Both are associated with each other in many companies and many companies call themselves “Lean-Sigma”. (Dittmann, 2013)

With the lean-sigma concept the creation of flow set up continuous improvement that falls under two concepts which is push and pull. Flow is inventory moves continuously throughout the supply chain with non-value added activity being performed. Pull means that customer orders start the work process, which has a trickledown effect to the supply chain. Striving for excellence means that supply chains must have perfect quality. There are five different types of inventory. These are raw materials, work-in-process (WIP), finished goods, maintenance, repair and operating supplies (MRO), and pipeline/in transit. (Monczaka, Handfield, Ginipero, & Patterson, 2014)

These five types of inventory is called physical inventory and plays an important role in all supply chains. Without having any inventory, companies cannot build their products, provide excellent customer service, or run operations. A large reason to hold level of inventory, which includes bulk material, WIP, or material packed already is to keep customer satisfaction high. This avoids shortages and helps maintain companies service levels with their customers. On the same hand, companies need to develop a strategy to control and reduce the amount of production inventory maintained at any given time.

However, there is a downside to keeping inventory. By keeping unnecessary inventory that results in uncertainty. This results in not being able to plan inventory requirements because
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of supply chain variability. Poor quality and material yield has been a major source with unnecessary inventory investment. Many companies try to order more than required to cover expected supplier inconsistencies. Yet, this causes a certain level of material defects. Another large cause of this leads to inaccurate or uncertain demand forecast which is common source of uncertain affecting inventory levels. Companies keep high levels of increased safety stock levels to compensate for demand uncertainty or inaccurate forecast. (Monczaka, Handfield, Ginipero, & Patterson, 2014)

Lean thinking is a way to understand the value from the customer’s perspective and eliminating waste processes that do not add value. It is a process improvement methodology to eliminate waste seen from a customer’s perspective. This idea is based on the mindset of “Just-In-Time”. Lean reduces lead times, eliminating bottlenecks, and elimination of non-value added processes. This involves applying several core principles to the manufacturing workplace and to attach problems if internal lead times. Some of the tool used in lean includes employee involvement, 5S visual management, pull systems, continuous improvement, and supplier partnerships.

Six Sigma is focused on process variance and improving process that are not in control. This relies on statistical and problem solving tools that are related to these elements. This approach attacks problems that deals with too much rework, quality defects, processes that are unreliable and out of control unexplained ships in product specification outcomes, and inspection as a form of quality control. Today many companies are combining both logics to have a continuous improvement processes focused on improving quality and eliminating waste.

The underline premise of lean is relevant to all companies, regardless of the specific planning and control tools that are used. Even though the JIT logic is not premise in all
ideologies of organizations there are many ways companies can adapt the lean philosophy. One of the ways is that corporations can maximize the use of people. People are considered productive, useful sources in innovation. The lean approach focuses on workers that best source of ideas on how to improve processes. These employees work around the equipment and process all day. They become highly familiar with the strengths and weaknesses of the current system. Another concept is to simplify first and then apply new technology. This is a simple and important lesson. New technology not only takes time to learn but it takes on a whole set of complicated issues. Also, an organization needs to focus on gradual but continuous improvement. Continuous improvement requires small and daily improvements that ensure the processes is moving forward. Also, known as “kaizen”. Finally, one aspect is to minimize waste. Waste refers to any type of activity that is not creating value. Poor quality is one form of waste. The key to Lean is to attack waste in any form and constantly vigilant about waste. (Monczaka, Handfield, Giniiero, & Patterson, 2014)

The lean supply system is the first major element of a lean supply chain. There are six levels of a lean supply system. The first element, is a commitment to zero defects by the buyer and seller. Second, is the frequent shipments of small lots to strict quality and deliver performance standards. Third, is a close buyer seller relationship. Fourth, is focusing on a stable productions schedule sent to suppliers on a regular basis. Fifth, focuses on extensive sharing and economic information between supply chain departments. Sixth, is electronic data that is interchanged with suppliers.

An effective supply planning strategy should be well thought out and developed within the lean manufacturing process. Every area should have a document strategy that has goals and strategic actions. Also, a plan for continuous improvement throughout the supply chain needs to
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be developed. Companies who partner with customer/suppliers to eliminate non-valued added work benefits on both sides of the relationship. (Monczaka, Handfield, Ginipero, & Patterson, 2014)

**Logistics and Transportation**

Logistics is the part of the supply chain management that plans, implements, and controls the efficient, forward and flow and storage of goods, services and information between the point of the company to meet the customer’s requirements. Increased recognition has given business logistics changes in the discipline and several key reasons for the importance of logistics. (Murphy & Knemyer, 2015) The lean logic focuses on lean within the transportation aspect of logistics. This refers to the efficient movement of goods between the buyer and seller. It involves frequent delivers of smaller quantities that are shipped to the purchaser. (Monczaka, Handfield, Ginipero, & Patterson, 2014)

A lean transportation network relies on company owned or contracted vehicles that pick up and deliver per a regular schedule. This is also called the closed-loop system that moves goods from supplier to purchaser. Also, the idea of purchaser back to supplier with the return materials such as containers. A supplier and purchaser do not coordinate their material requirements on a production schedule. However, lean systems have suppliers coordinate productions schedules with customer schedules. This reduces the number of carriers and the number of regions these carriers move to. There is a long-term contract with carriers that formalize the dedication transportation networks. A closed loop is made when a pick up freight from supplier and deliver on a regular schedule. This way you can use returnable containers to eliminate waste. (Monczaka, Handfield, Ginipero, & Patterson, 2014)
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A value stream map is a way to keep track of this kind of performance. This uses the standard technology that is used by Lean experts. This map shows transit time, unloading and loading time on each end of the transport. Once this is created, the improvement team looks for opportunities to reduce the cycle time and variation by creating a reduction in both. This can help improve inventory and fill rates by working on the transportation end of the logistics. (Dittmann, 2013) The objective is to call on people and shipping methods whenever they are required. This would work before suppliers even know there is a problem. Smart logistics can provide a framework that is forward in terms of capabilities. (Nelson, Moody, & Stegner, 2001)

Logistics is a compelling way to find the end goal of your company. Once you decide what the end goal is for your corporation everything you do to work towards that goal is productive. The one way to do this is to identify your supply chain strategies constraints and find ways to improve them. One of the ways you can maintain your end goal is to focus on the record of how your business is doing. These measurements are defined in terms of the goals of your company. You will need to be active in the need for knowledge and you should seek out answers because they do not find them for you. One way to do this is to experiment ideas before you put them into actions. Another aspect of achieving your end goal is to create teams that are focused on critical thinking. The more people you have on the job the better. Everyone has different opinions and different outlooks on something. (Goldratt & Cox, 2006)

Once a corporation identifies the constraints on their company they should exploit it. By adjusting non-constraint resources can produce a higher rate than constraint resources. This can cause you to lower the carrying cost of the products waiting for the constraint recourses to be finished. You should be able to take the workload off the constraint. One way to do this is to use resources to produce constraint items. (Goldratt & Cox, 2006)
Developing a Strategy

It is important to clearly understand how enterprises, choose to compete it is important to fully understand the four steps to a supply chain strategy. It is important for each department to work under the same ideology concerning forecast a concise strategy needs a supply chain operation to see itself as a customer facing entity. When developing a strategy, you need to look at the core competencies, focus and means of differential when developing a strategy.

The next step is to develop a detailed, assessment of the capabilities that exist within the organization and the extended supply chain. First, you need to examine your organization’s assets and evaluate how well they support the overall strategy. For example, old machinery and disparate systems may mean high operational cost. This does not count for the low-cost provider strategy. Next, you should look to see what your firm can provide for you in the industry. This can be both inside and outside your industry to gauge core competencies. Once this assessment is done create a team to review and organize recommendations, validate opportunities, define the risk, and implantations. (Happek, 2005)

First, you need to develop an implantation plan that is critical with the “go forward” supply chain strategy. This is tied to the business strategy and it is high specific. This specification includes enablers and metrics. The development should include takes, roles, responsibilities, a corresponding timeline, and performance metrics. (Simchi-Levi, Kaminsky, & Simchi-Levi, 2011) A sub-team and a project manager is responsible to resolve issues and track statuses. Remember to include your supply chain partners.
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While you don’t need to divulge the full details of your strategy, communicate how you would like to do business. You should seek out mutual goals with both organizations so it can be executed. This will also help you learn who you can do business with. (Pagell & Wu, 2009) Another part of this would include opportunities to outsource areas that are not your core competency. If someone can do something cheaper, it may be worth outsourcing to drive down cost. (Happek, 2005)

Executing a Supply Chain Strategy

Execution involves one working close with your plan and applying good project control. One way to monitor this success is throughout implantation and beyond. For example, tracking performance allows a company to measure how successful it is realizing the goal of a strategy. This makes people understand their contribution and responsibilities. Performance management works best when people are rewarded for their performance. These performance goals should be used to communicate business expectations to the outside entities. More the supply chain is involved, the more supply chain strategies are supported.

Annually you should visit your supply chain to see if you met your goals and ask various questions. Did you meet the goals of the business strategy? Has the needs of the partners changed? Has the industry changed with new competitors, business practices, products and technology? This is another way to find new opportunities to further your position in the organization of success.

Just as critical it is to align the supply chain strategy with the business strategy, it is important to connect with different groups and stakeholders. The goals of your supply chain should match up with the same speed of your business partners. A company may be able to move at speeds other supply chain entities are unable to maintain. This could result in misalignment
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and poor efficiencies. The idea you should focus on is strong communication between the supply chain. (Happek, 2005)

Avoiding Failure

Many organizations develop a supply chain strategy after a business strategy has been created. This approach does not support the infusion into the business strategy development into a supply chain model. This could improve the business strategy as well. A supply chain strategy should always support the intent of the business strategy. A focus on the four levels need to have a success fully developed, company that could close major gaps between their business strategy and supply chain strategy.

By developing both separate you run into the risk of developing a supply chain strategy without an understanding of the business value propositions. Which could include cost and benefits being unknown. Utilizing a new resource in the model that was not exposed to the original business strategy thinking. Also, there is a change it is conflicting communication to the organization where objectives may be contradictory. (Happek, 2005)

Competitive Advantage

Once a company understands the different elements that goes into developing a supply chain strategy there is a need to fully understand your competition and technology trends. However, failure to understand your competitors lets your competitors understand their profits. You must fully understand the competition to develop your supply chain strategy. Understanding process advantages and disadvantages offers much more insight into a competitor’s capability.

If you competitor uses Lean and Six Sigma methodology and you do not, you may face a competitive disadvantage. Another objective one must examine is the cross docking with the competitor. One way to look at this is the supplier support. Supplier offer availability when it
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requires a stable order pattern. A company needs to have a solid focus on continuous improvement. Documented and standardized methods should support the right people. Inbound and outbound doors at the facility should be designed to maximize efficiency. Another competitive advantage is to make sure you understand the transportation network. For example, does the competitor focus on the lean ideology or do they use many third-party LTL companies to carry their products? (Dittmann, 2013)

While many companies use a consultant to value the competitive advantage a corporation has over other information can be done by internet and database searches. Companies that are privately owned or foreign owned competitors have a tough time finding this information but it is not impossible. You can gather this information by using publicly available information that is easy to access. Another way to access this information is to look at your previous employees who worked for its competitors. Also, you can look to your suppliers and customers who work with both sides. Many of these two groups will not share a large amount of information but enough to give an idea on how the other companies run. (Dittmann, 2013) An analysis was done that showed that supply chains best areas are focused on a traditional supply chain management style. (Pagell & Wu, 2009)

History of the Wisconsin Cheese Industry’s

The leader in the industry in Wisconsin was a man named Hiram Smith. His brother who was named John Smith, failed at commercial cheese making in Wisconsin in 1844 and closed his business after only a year. Hiram, who was a local farmer created a business strategy that would take milk from the neighbors to be made into cheese. Cash was paid for the milk and a percentage of the finished product was retained as payment for the making. This was the start of the nationwide “dairy land persona” with cheese in Wisconsin.
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Following Hiram’s success his brother in law Hiram Conver started a farm in Sheboygan Falls. Here, he partnered up with a few people to build a building that was intended for the cheese making outfit which would make cheese out of milk from his herd and neighbors herds. The business continued to grow and production of cheese started to be made. Conver’s partner, De Land continued to manufacture cheese and devoted his entire business to cheese dealing. His business is still around today in Sheboygan county.

Chester Hazen came to Wisconsin in March 1845 and he bought eighty acres of land in Fond Du Lac County. Hazen soon learned that Wisconsin’s cheese companies have become a gold mine in the United States. He created a factory system devoted entirely to cheese making. The Ladoga Factory, was the first cheese factory in the state. Soon, thousands of cows started to produce milk for this cheese factory. Factories started to spring up and family companies started to be formed.

The rapid expansion of cheese in Wisconsin created serious problems in distribution and supply chain. When there were just a few factories of cheese it could be easily disposed off to a store. However, due to the growth there was no outlets to suffice as production rapidly mounted. To help solve the problem of this supply chain matter the Wisconsin Dairy Board was created and trade shows were developed. As the expansion was increased so did the sales with Wisconsin’s cheese industry. This cheese was spread across the entire United States and even overseas. In the decades between 1899 and 1909, Wisconsin became the leader in cheese.

(Cheesemaking in Wisconsin: A Short History, 1924)

Today, Wisconsin leads the nation in the number of cheese plants with 127. This is twice more than any other state. Wisconsin is the number one cheese producing state in the country. With 26% of the total annual U.S. cheese production. Also, it is the leading nation in production
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of specialty cheeses such as gorgonzola, Gruyere, Asiago, Feta, Aged Cheddar, Gouda, blue and many others. This accounts for 46% of total specialty cheese production in the United States. Furthermore, if Wisconsin as a country, it would rank 4th in the world for total cheese production, behind the United States, Germany, and France. (Dairy Facts, 2017)

The Supply Chain Problem

Due to the vast history of the Wisconsin Cheese Industry a problem has been created. It is the lack of supply chain strategies within cheese factories. Wisconsin cheese companies have been closing in large numbers due to the lack of supply chain strategies in the new competitive market. Commercials have been created stating “happy cows come from California”. Wisconsin has seen the devastating loss of jobs due to these closures and seeing a new market move elsewhere asking the question “what is happening with Wisconsin’s Cheese factories?”

Companies failures are due to the lack of strategies within a company. Examples, of these failures are with many cheese companies closing in Wisconsin. Borden Cheese is a private-label company that announced in 2015 that they will be closing their doors due to out of date technology and infrastructure. This company has been operating since 1954 and it was a family owned large cheese company. With the announcement of the closure there was a loss of 300 jobs with the company. John Stevens who is the chief operating officer (CEO) stated “despite numerous upgrades to this facility, it has become increasingly difficult for us to remain competitive in today’s marketplace.” This closure comes despite a $13.4 million-dollar project in 2011 to modernize the plant. (Associated, 2015) In 2015, Schurman’s Wisconsin Cheese Country Inc announced that they were closing after eighty-eight years. The reasoning was due to the poor location of the facility. It was in Dodge county which was too far away to partner with
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another local Wisconsin outlet. The owner stated “We needed to grow in order to survive.” (Mitchell, 2015)

These are two examples of cheese companies in Wisconsin that have been forced to close due to the competitive market, technology, problems with infrastructure, and locations. Wisconsin cheese businesses go back to the early 20th century. This has caused companies to be stuck in their old way of doing business for generations. To be competitive in the ever-changing market companies need to focus on continuous improvement to help implement change.

Wisconsin Cheese Supply Chain Strategies

The first step for a cheese company to develop a successful supply chain strategy is to understand the four different parts that are associated with the supply chain in the cheese industry. First is developing a plan on how to manage product from supplier/plant to ship to the end customer. (Dittmann, 2013) For example, when building a business plan, you need to decide if you want to have your own production facility or if you want to outsource your company. Next, it is important to tie both the business plan and supply strategy together to find the end common goal. (Happek, 2005) It is important to fully understand your companies end goal. Fully understand what your company’s core competencies, focus and means of strategy is. For a Wisconsin cheese company, the end goal is to be a low-cost provider to a customer. This is where you would find your competitive advantage. (Goldratt & Cox, 2006)

The second part of would be focused on sourcing and procurement. It is important to figure out the first part of you supply chain strategy that focuses on your company producing product or outsourcing product from a vendor. (Joshi, 2009) In the cheese industry, it is important that you understand what the total capacity of your vendor or production plant is. For
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e.g., it is important for a cheese company to fully understand their vendor or plants total capacity a week by pounds. This would help a company have a background on what they can ship to the customer weekly based on the capacity given by the source. If the capacity is above what the customer requires another source will be needed to fill this requirement.

Also, it is important to understand the suppliers cost and shelf life requirements. For example, if your company agreed to 50% shelf life to all customers for cheese. It is very important that you agreed with the vendor or production what shelf life you require upon receipt. This way guidelines would be developed and agreements would be made between vendor and customer. Also, it is important for the purchasing team to focus on excess inventory. All cheese has a shelf life and if there is a requirement by the customer is important that the buyer understands the guidelines on how much cheese to buy. This is a way to avoid excess inventory. (Gunasekaran, Lai, & Edwincheng, Responsive supply chain: A competitive strategy in a networked economy, 2008)

One way to focus on this is to create a control theory focus on the commitment between supplier and customer. The building of a supplier-customer relationship is important when building a supply chain strategy. Strategy and planning define the relationship in terms of goal, scope, roles and responsibilities. (Dittmann, 2013) In the cheese industry, a supplier and customer relationship is important to work together for the end goal. This goal could focus on reducing excess inventory, managing pallet space on trucks, or increasing product purchased.

The third part focuses on inventory, quality and manufacturing. With cheese companies in Wisconsin it is important that companies stay close to the company’s facility. This not only helps your local community but helps save companies money. Also, the FDA keeps a close eye on all trackability on food and produce. Trackability systems are systems that help manage
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follow of inputs and products to improve overall efficiency, food safety and quality. (Golan, Krissoff, Kulchler, Nelson, & Pric, 2004)

One technique that is not widely used in the cheese industry is the logic of Lean Manufacturing and Six Sigma. This is focused on flow that moves throughout the supply chain when non-value added activity is performed. (Monczaka, Handfield, Ginipero, & Patterson, 2014) Lean thinking is a way to understand the value looking at what the overall customer wants. Wisconsin has many production facilities closing due to the lack of improvements over the years. Lean Manufacturing focuses on continuous improvement and Kaizen to help reduce waste. Also, to help avoid product due to age the idea of JIT reduced lead times, bottlenecks, and non-value processes. (Monczaka, Handfield, Ginipero, & Patterson, 2014)

The final part of the road map of the supply chain is the logistics and transportation end of the cheese industry. This part focuses on the plans, implements and controls of the storage of goods, services and information between the customer to meet their requirements. Due to the cheese industry only being able to store their products in a cooler product needs to be kept tight with inventory. Also, trucks in transportation need to be cooled down to a certain temperature to avoid spoilage on food. One way to help solve this would be the lean logic of transportation. This relies on a company owned truck that picks up and delivers on a regular schedule. (Monczaka, Handfield, Ginipero, & Patterson, 2014) Logistics is a compelling way to find the end goal of the company. Once you decide what the end goal is you can work towards this.

Conclusion
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A supply chain strategy is a road map that starts with what your customer needs in the end. You can find the strengths, weaknesses, and opportunities through your supply chain by developing this strategy. There are four parts that go into creating a supply chain strategy. These parts are developing a plan of action which focuses on the end goal of the supply chain. Developing a procurement and sourcing team to strategies the best options for your supply chain. Deciding the end factor on how the manufacturing and production will be done on with the company. This could include ideology of lean manufacturing or six sigma and implant these logics in a corporation. Finally, creating basis of logistics, storage and transportation is part of the four parts.

After an understanding, has been developed there needs an overall design within the supply chain. While there are many companies that develop a business strategy a supply chain strategy is just as important. By focusing on the four parts of a supply chain you can develop the approach to a strategy. This includes developing a implementation plan, coordination between partners, performance measurements, and ways to reduce cost. This is the solid basis to avoid a pitfall within your company.

The Wisconsin cheese industry at one time was at its all-time height. Wisconsin is the leader of the cheese industry in the United States and it has been take way for over 150 years. However, due to the age of the Wisconsin cheese industry in Wisconsin many companies are falling behind and are no longer competitive. This is due to poor infrastructure, lack of location, and no longer innovative. A supply chain strategy needs to be developed for these companies so they can be competitive in today’s day and era.

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