OUTSOURCING THE SUPPLY CHAIN: DEFINING THE OPTIMAL RELATIONSHIP BETWEEN CUSTOMER AND VENDOR

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TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

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With the supply chain model and global procurement becoming increasingly popular due to the global demands of today's economy, companies are committing themselves to multiple business-to-business relationships. Establishing the new relationship between the customer company and vendor company within the supply chain is a complex process that is contract intensive in nature. The purpose of this research is to identify the key elements of the contracts between customer and vendor companies, translate these findings into a theoretical model of the ideal contract between customer and vendor companies, and to identify the nature and implications of problems that arise

from insufficiently addressing any of the key elements within these contracts. Responses from interviewees reinforced the theoretical model and also showed a connection between the outsourcing contract itself and the bullwhip effect. Finally, this research shows that the strength of the outsourcing contract and strength of the bullwhip effect are interrelated.

CHAPTER I

INTRODUCTION

With the supply chain model and global procurement becoming increasingly popular due to the global demands of today's economy, organizations are increasingly deciding to outsource functions within the supply chain model, and are therefore relying upon the outsourcing contract to dictate the nature of the customer-vendor relationship. In theory, such a relationship allows both organizations to focus upon core competencies, thus improving overall efficiency and cost effectiveness. The relationship between customer and vendor companies is "contract intensive in nature" and a "successful outsourcing process [relies upon] a good contract (Zhu et al. 2001)." The existence of an outsourcing contract is essential but simply developing the contract is not enough to solidify this type of relationship. Establishing relationships between partners within this model is a complex process and "companies need to plan [the creation of the contract] effectively if they are to maximize the benefits and minimize the risks of outsourcing (Anonymous [A] 2004)."

The objective of this research is to identify the key, also standard, elements of the outsourcing contract that are necessary for the success of the customer-vendor relationship. Previous research has shown that the outsourcing contract is important, but has yet to incorporate the commonly recognized elements of the outsourcing contract into a cumulative model. This research proposes that the customer and vendor companies can achieve the best possible relationship by including the best mix of the standard set of minimal requirements, or key elements, while sufficiently addressing organization-specific requirements. These key elements should be specific, yet all-encompassing, in that they effectively describe all expectations and details for the customer-vendor relationship, yet capture the general nature of outsourcing and the supply chain model as a whole. It should be noted that while many outsourcing contracts across certain industries resemble each other in their key elements, in that the industry has pre-specified, the most complete contracts will take the organizational environment and nature of the relationship or work into consideration as well.

This research attempts not only to create a theoretical model of the most desirable outsourcing contract, but also to identify common problems associated with insufficiently addressing the key elements of a contract. There are multiple problems associated with insufficiently addressing or overlooking any of the key functions of the outsourcing contract and organizations involved must deal with the repercussions accordingly. Most problems within the supply chain stem from a poorly designed or weak contract, most notably the bullwhip effect, or "variations in demand that begin with the customer at the end of the chain and become increasingly large as they radiate backwards through the chain (Stevenson 2007)."

It is also proposed that these common problems all propagate the bullwhip effect, thus creating interconnectivity between the bullwhip effect and the outsourcing contract itself. This study argues that there is a relationship between the strength of the outsourcing contract and the magnitude of the bullwhip effect felt within the supply chain. The outsourcing contract is formed with the purpose of avoiding problems such as the bullwhip effect and to prevent uncertainty through the sharing of information, yet it still exists to some extent within all supply chain models because uncertainty cannot be completely eliminated, only reduced. This implies that the bullwhip effect is therefore unavoidable. It is with this notion that the importance of the outsourcing contract resurfaces to help the customer and vendor company cope with the bullwhip effect. A strong outsourcing contract is essential to minimizing the bullwhip effect. Therefore if a strong outsourcing contract does not exist, the contract could be devalued as a whole and the strength of the bullwhip effect intensified.

The remainder of the paper will be organized into chapters. Chapters two through four will define and establish interconnectivity between the terms and concepts associated with supply chain, outsourcing, and contracts in general. Chapter five identifies the key elements of the outsourcing contract and the implications each carries for the customer-vendor relationship itself. A proposed theoretical model further addresses the key elements of the outsourcing contract and expands upon them by providing the associated problems that may arise if any of the key elements are overlooked. This chapter is followed by the methodology used to test the proposed theoretical model with industry data. The methodology includes a discussion of the complete interview process and its limitations. The analysis and discussion of results of the data collected from the interviews further discusses the common problems presented with insufficiently addressing the key elements identified in chapter five. The final chapter of this thesis includes conclusions and recommendations for future research.

Research Objectives

- Define the terms associated with supply chain, outsourcing, and contracts within the scope of this study.
- Demonstrate the interconnectivity between the supply chain, outsourcing, and the contractual relationship between customer and vendor companies.
- Identify the "players" within the supply chain and how their interaction is controlled by the outsourcing contract.
- Identify the key elements of the outsourcing contract and illustrate their importance.
- Identify problems associated with insufficiently addressing any of the key contractual elements.
- Demonstrate the bullwhip effect as the culmination of these problems.
- Determine the nature of the relationship between the outsourcing contract and the bullwhip effect.

CHAPTER II

THE SUPPLY CHAIN

The supply chain consists of a coordinated network of people, organizations, information, and resources that facilitate the transformation of materials to some sort of end product or a specific service to an end-user. Supply chain operations "require managerial processes that span across functional areas within individual firms and link trading partners and customers across organizational boundaries (Bowersox et al. 2002)." Implementing the supply chain model within an organization allows it to focus on its core competencies and outsource any of the supply chain functions to an organization that can perform it more efficiently and cost effectively. For each firm involved "the supply chain relationship reflects strategic choice". A supply chain strategy is a channel arrangement based on acknowledged dependency and relationship management (Bowersox et al. 2002). The objective of the supply chain model is to maximize the overall value generated, with that value being equal to the final worth of the product to the customer less the effort expended by the supply chain. The performance of the supply chain is evaluated according to how it reduces cost or increases value (Lankford 2004).

In the supply chain, organizations can adopt models that range from a linear model to a complex network structure and have movement of products and services in either an upstream or downstream direction (sometimes called "reverse logistics"). The supply chain begins with the need of a customer, whether it is a consumer or another business entity. This need, or demand, is integral to the supply chain and is the major driver of movement. Regardless of the complexity of the structure, all parties involved within the supply chain are either directly or indirectly involved with each other and must have some system of information integration on all levels. The success of a supply chain relies upon the ability of all players involved to effectively collaborate with each other and integrate information systems, thus avoiding the bullwhip effect, or a distortion of information as it is transmitted throughout the supply chain (Lee et al. 1997).

Who are the Players within the Supply Chain?

In the modern business environment, it is usually inefficient for organizations to perform all operations in-house or to exist as an entirely independent entity. The supply chain model creates interdependence between organizations and allows for the creation of a more efficient business process between multiple players. A "player" is defined as any business entity performing a function of the supply chain. Different players are involved with the many steps of designing, forming, implementing, and measuring the supply chain model within organizations, beginning with a customer company. The "customer company" is one that makes the decision to outsource or to integrate some of its operations with those of outside organizations; it can also be the player within the supply chain who expresses the original demand for a specific end product. Aside from the customer company, there are three major categories of players within the supply chain: those involved within the formation and maintenance of the business-to-business relationships; those that perform the actual processes as required by various functions of the supply chain, also referred to as "vendor companies"; and the customers (both business end-users and consumers).

Forming Relationships between Supply Chain Players

The formation of new business-to-business relationships is mostly controlled by development teams, strategy teams, and analysts. They can operate from within the customer company or be provided by an outside organization offering third-party supply chain management services. These players examine the customer company's needs, goals, and capabilities while designing the best sourcing strategy and supply chain model to maximize all relationships. These players also exist within the potential partner organizations within the supply chain, as this analysis must happen at both ends of the business relationship. Once the evaluation of potential business partners is conducted, a detailed plan of action must be implemented between players at all levels. Suppliers, vendors, purchasing managers, manufacturers, warehousers, transportation providers, distributors, retailers/wholesalers, all perform the business processes at various levels within the supply chain. Once the relationships between the customer company and various players are formed, it is important for the development and strategy teams and analysts to stay involved within the relationship for purposes of measurement and evaluation. They will also determine what adjustments will be made and how they will be implemented. It is also highly beneficial for the vendor companies (these don't necessarily have to be "vendors" in the definitional sense, but anyone who is performing a supply chain function) to form alliances between themselves and other vendors, also called "second-tier relationships." These relationships can increase the efficiency and cost-effectiveness for all players involved, including the customer company, but must be taken into consideration when the initial relationship between customer and vendor is formed.

Important Elements of Supply Chain Management

A supply chain has as a minimum four functions: purchasing, operations, distribution, and integration. Each function is associated with critical issues that impact the communications among partners of the supply chain. Some of these relationships are summarized in Table 1.

Supply Chain Elements	Corresponding Issues[1]
Purchasing	• Supplier relationship management • Supplier evaluation • Strategic partnerships
Operations	• Demand management • Total quality management • Communication systems • Production systems
Distribution	• Transportation management • Development of distribution network • Customer relationship management
Integration	• Supply chain as a strategic planning process • Globalization • Performance measurement and evaluation

Table 1. The Four Functions Impacting Supply Chain Management.

(Adapted from Principles of Supply Chain Management, 2005)

[1] For additional definitions refer to Principles of Supply Chain Management (2005).

The purchasing element involves traditional partner-relationships, such as the one between a customer and vendor company. The corresponding issues are activities that are integral to forming and supporting this relationship. Operations elements are those that involve the actual performance of the job, as required by the customer company. Quality, communication, and the means of production are all key to the production of an actual product or performance of a service. The distribution element revolves around the delivery of the product, or logistics, with its issues focusing on the delivery of the product in such a manner as to successfully maintain the relationship with the customer (both the customer company and consumers). Integration elements involve the coordination of the issues within the previous three elements, with the goal of supply chain players being fully incorporated into a single system.

CHAPTER III

OUTSOURCING

As globalization increases, the complexity of the supply chain also increases. This trend makes it more improbable that an organization can meet customer demands on their own and by relying solely upon in-house activities. Organizations are required to focus upon their core competencies to remain efficient and competitive. Thus outsourcing, or obtaining a product or service from outside the organization itself, has become a very common practice within business organizations. "Outsourcing permits an organization to redirect its resources, most often people resources, from non core activities toward activities which serve the customer. The organization can redirect these people or at least the staff slots they represent onto greater value adding activities (The Outsourcing Institute 2006)."

The decision to outsource has both an operational and economic component. The goal of reducing costs is most commonly stated as a company's fundamental reason for outsourcing an operation. "Outsourcing provides a certain leverage that is not available internally in the company (Zhu et al. 2001)"; the potential for this leverage is demonstrated by the reasons for outsourcing, which are presented in Table 2. These outsourcing reasons are not mutually exclusive, but instead are what attribute to a company's overall cost savings through the process; this goal is multidimensional. For example, the goal of improving the company's production capabilities can often lead to overall cost savings for the company.

1.	Reduce and control operating costs
2.	Improve company focus
3.	Gain access to world-class capabilities
4.	Free internal resources for other purposes
5.	Resources are not available internally
6.	Accelerate reengineering benefits
7.	Function difficult to manage/out of control
8.	Make capital funds available
9.	Share risks
10.	Cash infusion

Table 2. Top 10 Reasons Companies Outsource.

(From the Outsourcing Institute, Survey of Current and Potential Outsourcing End-Users, The Outsourcing Institute Membership, 1998)

The Relationship between Outsourcing and Supply Chain Management

Outsourcing is an important aspect of supply chain management; because outsourcing and supply chain management usually co-exist, with outsourcing being a necessity of the supply chain model itself. A successful outsourcing process relies upon the formation of an actual relationship between the customer and vendor companies, meaning both parties understand company goals and objectives, have explicitly stated a strategic vision and plan, have gone through the proper vendor-selection process, and most importantly have developed and executed a properly structured contract. "Outsourcing development invariably fails if the outsourcing party selects the wrong supplier or establishes insufficient contractual arrangements (Thaker 2005)."

The most beneficial relationship to both parties involved is one that resembles a strategic alliance, or a true partnership; this is also the most complicated type of relationship to form and maintain. It involves an alignment of strategies, commitment and trust, and thorough integration of information sharing so as to fully increase the customer and vendor company's' capabilities and manageability. The ability to maintain such a relationship revolves around the soundness of the outsourcing contract that exists between both parties.

CHAPTER IV

CONTRACTS IN THE SUPPLY CHAIN

In general terms, a contract is "an agreement between two or more persons which creates an obligation to do or not to do a particular thing (Black 1979)"; more specifically it is "a promise, or set of promises, the performance of which the law recognizes to be a duty and for the breach of which the law confers a remedy (Texas Jurisprudence 1993)." The essentials of a contract, in the definitional sense, are 1) competent parties, 2) subject matter, 3) a legal consideration, 4) mutuality of agreement, and 5) mutuality of obligation. Consideration is "the cause, motive, price, or impelling influence which induces a contracting party to enter a contract (Black 1979)." In principle, consideration should be fair and of appropriate value. For example, offering to pay someone one dollar for an acre of land is usually not considered adequate consideration. For a binding contract to exist, each of the following elements must be present:

- an offer,
- an acceptance in strict compliance with the terms of the offer,
- a meeting of the minds,
- a communication that each party has consented to the agreement's terms,
- execution and delivery of the contract with an intent that it be mutual and binding,
- and consideration (Texas Jurisprudence 1993).

A contract can be either express or implied, meaning that the terms are openly discussed in explicit language, or implied meaning the terms are inferred by the law, and reasoned by their acts or conduct. A contract cannot be both express and implied, but terms within an express contract can appear vague and their implied meaning debated by both parties. The terms of outsourcing contracts are expressly stated, therefore they have "created an express contract and are bound to it to the exclusion of conflicting implied terms (Texas Jurisprudence 1993)." Outsourcing contracts are also typically bilateral contracts, those in which each party makes a promise to the other party, and should take the reciprocal interest and utility of both parties into consideration.

A binding contract also dictates the specific actions both parties are asking each other to perform; this is referred to as "performance". Performance is the doing of the acts required by the agreement, in the time and place in the manner stipulated. A breach of contract exists when either party fails, without legal excuse, to perform any promise that forms a whole or part of a contract (Texas Jurisprudence 1993).

Contracts and Supply Chain Management

Contracts are integral to the business-to-business relationship created when companies outsource a function of the supply chain; this relationship is "contract intensive in nature (Zhu et al. 2001)." The contract can provide a framework for, and define the nature of, the relationship. The outsourcing contract helps to hedge uncertainty, formalizes the relationship, and defines the purpose/intent of the relationship. A good outsourcing contract will protect the companies from this type of uncertainty. As the supply chain grows in size and complexity, the contract itself will also follow this trend. Supply chains rarely exist in a linear model between two single organizations, and the contract should reflect this. Contracts are also becoming increasingly complex to match the increasing complexities of the business environment, such as the prominence of e-business. Although the contract may exist between a single customer and vendor company (as it is presented within this research), there are outside parties that will affect this contract and they must be recognized either explicitly or implicitly, depending upon the degree of information each company has.

CHAPTER V

OUTSOURCING THE SUPPLY CHAIN: PROPOSED THEORETICAL MODEL

Having an established contractual framework before entering the customer-vendor relationship is essential. It is not acceptable to formulate any contractual agreements after entering this relationship or in retrospect. The contract governing the outsourcing relationship can be the most important hedge against misunderstandings and disappointments; therefore the more specific the outsourcing contract is between customer and vendor companies, the more likely the relationship will be beneficial to both parties (Anonymous [B] 1997). When formulating the outsourcing contract, the companies involved must decide upon the best form of contract to adopt to ensure performance, value, and to optimize upon the prospective investment. It is also key that both the customer and vendor companies recognize the environment within which each party operates and adapts the contract accordingly. Regardless of what type of contract is developed between customer and vendor companies, outsourcing contracts should always address the standard terms with respect to creating value from immediate and ongoing operations. The challenge in creating the contract is to pick the approach that will achieve optimum value over the long run (Davis 2004). The outsourcing contract has four major categories of contractual elements, key performance elements, financial elements, human resource elements, and legal elements, all of which are indicators of a successful customer-vendor relationship.

- Key performance elements – These elements revolve around achieving the highest overall levels of quality for products and services. They dictate the standards for quality and service levels, define performance incentives and penalties, provide a framework for communication between customer and vendor companies, and provide rules of confidentiality.
- Financial elements – These elements are concerned with the monetary valuation of the outsourced job. They indicate major costs, how pricing is determined, and regulates invoicing and payments.
- Human resource elements – These elements address the management of human capital within both customer and vendor companies. They include terms for transfer of staff, promised work for employees, and retention of key employees.
- Legal elements – These elements address the fact that disputes often arise and provide a framework for the resolution of these disputes. They dictate the transfer of assets between customer and vendor company, intellectual property rights, warranty and liability, terms for disengaging, and appropriate methods for dispute resolution.

The proposed theoretical model (Table 3) addresses these key elements and demonstrates their importance by discussing the negative implications caused by missteps in the development of the outsourcing contract.

Key Elements for Performance

Service Levels and Quality

It is essential that the customer company fully disclose its expectations for quality and service levels, and the means for measuring performance within the outsourcing contract. To effectively do this, the contract must first explicitly describe all goods or services the vendor company expects from the customer, the specifications for all products and services provided by the vendor, and the scope of all services provided by the vendor to the customer company. Specifications need to be precise, avoiding ambiguity (Moore 2002). The outsourcing contract must contain a detailed description of all expectations, including who the legal entities are who are performing the work, a detailed description of how products/services will be evaluated, and who is qualified within either company to evaluate vendor performance since service levels for in-house functions are commonly used as the benchmark for outsourced functions. Contracts that encourage vendor performance and discourage underperformance are therefore clearly of interest to managers (Kweku-Muata and Sullivan 2003). It is not enough for the vendor company to simply perform the functions it has been contracted to do; it must perform them up to appropriate predetermined standards. Although technical mastery is an important prerequisite, it is not useful if it does not translate into business advantage (Kweku-Muata and Sullivan 2003). Predetermined performance standards should focus on achievement of minimum standards with an emphasis on maximizing profits while defining details of quality, quantity, timing, and method of delivery of the corresponding inputs and outputs required from both parties to support the outsourced process (Sadler 2002). Components of information quality, such as response time, accuracy of data, reliability, and quality of support services should all be defined according to the function being outsourced. To ensure these performance standards, the contract should also provide terms for allowing the vendor company to assign contracted work to secondary vendors. Providing permission to outsource a portion of contracted work adds to the complexity of the original customer-vendor company relationship and increases the importance of the contract's terms for quality and the eventual measurement of product quality by the customer company.

Scheduling

In addition to the disclosure of service levels, the customer company must also map out a complete program schedule. This includes dates for production, inspection (precursor to acceptance), shipping, and delivery. Shipping destinations should also be included in the program schedule. A good approach to delivery and acceptance is to set a specific delivery deadline and designate a specific testing and evaluation period. If no material problems are discovered the product will be accepted (Brennan 2003) and can proceed to the shipping phase. The program schedule should also provide the closure criteria for the job, whether it is a specific date, quantity of product, profit level, or any other performance metric. Because it is also important to recognize that delays will invariably occur within the program schedule, the contract should also list delays that are excusable in the customer company's eyes. Delays attributed to "an act of god, major labor strikes, unavailable site access, major changes to the work after a substantial portion has been completed, etc. (DiDonato 1993)" are often deemed excusable within a force majeure clause in the contract.

Performance Incentives and Penalties

Rewarding the vendor company within the terms of the service level agreement can be difficult but a minimum should be linked to measurements that truly test the quality, conformity, responsiveness, and reliability of the vendor company's performance (Sadler 2002). There are many approaches to establishing incentives and reward levels. It is up to the customer company to determine how quality and service levels will be measured. Turn-around time, buyer satisfaction, and the number of defective goods can all provide simple measurements for quality and service levels. Whichever performance measurements and incentives structure the outsourcing contract dictates, it is important to have clearly defined performance objectives and methods for determining attributable rewards for both companies involved. While incentives are important to the preservation of quality standards, a company that consistently underperforms must also face penalties; otherwise, it is very possible that the vendor company could settle for mediocre performance with little regard for the incentives.

Communication and Confidentiality

The effective communication of information is a great obstacle within the customer-vendor relationship. The outsourcing contract should create a communication infrastructure that creates channels and the direction of communications, lists methods of communications, and details appropriate subjects and information to be communicated between staff, companies, etc. The bullwhip effect commonly plagues many supply chains. It is a breakdown between levels of communication that creates discrepancies within the vendors' information and distorts the forecasted level of customer demand, often leading to extra spending and over- or under-production by supply chain functions. It is essential that the creation, implementations, and measurement of the communication structure are very specific. Time requirements for the notification of either party when problems or discrepancies arise are also essential. Issues often go unaddressed because there is no framework for how to properly address these issues.

Key Financial Elements

Costing and Pricing

Outsourcing contracts should be designed to handle most cost accounting systems, pending the contracts are performed to completion. The major hurdle in constructing the costing portion of the outsourcing contract is establishing which costs are direct and indirect, with direct costs being charged directly to the contract and indirect costs put into cost pools to be allocated in the future (Worthington 1992). Initial costs such as training, initial rearrangement depending on the outsourcing relationship, production planning, modifications, and new purchases must also be clearly mapped out with sufficient estimated values allotted for each cost. By effectively allocating costs, the customer and vendor companies can more accurately determine the price of the product, especially the case if a manufacturing function has been outsourced.

Pricing should be determined according to the basic costing principles. The outsourcing contract should dictate that payments for product costs will be made by the customer company based upon the assumptions that the actual costs were incurred, they were reasonable, and that they were necessary for the function at hand (Steele and Shannon 2005). Accordingly, pricing is most effectively established when the customer and vendor companies acknowledge profit as a function of both parties. Profit based pricing and compensation can be used to help ensure the quality of the product and discourage either the customer or vendor company from fraudulently classifying and allocating costs or pricing a product.

Payments and Invoicing

Outsourcing contracts are heavily focused upon costs, but terms for invoicing and payment should be considered of equal importance since payment issues are one of the most common. Invoices should be delivered to the customer company only according to the program schedule, or upon the completion of scheduled completion of a portion of or the entire job (depending upon requirements). It should also be determined when the best time for the customer to complete payment to the vendor so that overall cost is minimized (Song and Cai 2005). Payments should be required only after proper evaluation and acceptance of the product (Brennan 2003). Provisions governing late payments, excusable delays in making payments, and corrective action for mis-billing must also be included in the contract.

Key Human Resource Elements

Transfer of Staff

The outsourcing contract must address all issues concerning the customer company's in-house staff. It should include all provisions for how active the staffs of the customer company will be or the possible transfer of any staff from the customer company to the vendor company. "Traditional large-scale business process outsourcing often encompasses the transfer of employees from [customer to vendor]", such transfers are often small and less frequent, but they do occur (Sadler 2002). The contract should discuss which personnel functions will remain under control of the customer company, while the process for recruitment, growth in staff or downsizing, and personnel infrastructure must be addressed with regards to the vendor company (Siegel 2000). The contract must also include all requirements for additional staffing (more common in larger jobs) and provisions for the training, hiring, and compensation of vendor company staff to ensure that quality of staff is dictated in a thorough manner. To build trust and prevent turnover, the contract may also include provisions for promised work for employees when dealing with smaller vendor companies. The transfer of managerial functions must also be addressed to avoid a gap in expectations between the customer and vendor company. The retention of key employees also falls along these lines; key employees are usually specialists or management. Outsourcing may result in loss of expertise and know-how, thus it can be advantageous for the customer company to have clauses protecting such people (Siegel 2000). These provisions may also help to lessen the cost of training, recruiting, and rehiring, thus helping to keep the program together and the goals cohesive. The contract should explicitly state when key people are permitted to leave; this usually coincides with job completion (also stated within contract).

Key Legal Elements

Changes Clause

The outsourcing contract can be changed if both parties deem it necessary. It is an intense process involving proposal of a change, negotiation between parties and multiple legal entities. The most common change made is a change in the scope of work. This type of change targets "either changing or increasing the scope of the original contract work by the [customer] to meet some additional need, to correct an omission or error in the contract documents, or a constructive change arising from an occurrence that is beyond the control of neither the customer or vendor company (DiDonato 1993)."

Transfer of Assets

Terms of ownership of current assets, usage of new and current assets, and the transfer of ownership for assets should be addressed within the outsourcing contract. The nature of the customer-vendor relationship allows both companies access to new technologies and expanded investment capabilities and the outsourcing contract should address all the companies' assets accordingly. Licensing agreements and protection of intellectual property should also be addressed as assets. Licensing agreements should be structured so that the manner in which assets, namely intellectual property, are shared between the customer and vendor company, how this type of asset can be used to enhance the competitive activities of the customer or vendor company, and how the "owner" of the asset will be compensated for the value added to the other company's activities (Fitzpatrick and DiLullo 2005). It is very important that all parties involved within this type of transaction are identified as legal entities within the contract.

Intellectual Property Rights

Intellectual properties (IP) have been identified as compromising approximately eighty five percent of the overall economic value of a corporation (Smith and Parr 2000); therefore IP is the most important asset for the customer and vendor companies to consider when disclosing terms of transfer of assets in the outsourcing contract. IP constitutes a strategic resource that may be represented by patents, trade secrets, copyrights, and trademarks that can assist organizations in the development of core competencies and sustainable competitive advantage (Fitzpatrick and DiLullo 2005). Addressing terms of IP rights and ownership is complex but a necessity for the appropriate companies to protect its assets. The outsourcing contract should provide an infrastructure for adequate corporate security that protects IP exchanges amongst customer and vendor companies (Fitzpatrick and DiLullo 2005), how IP's will be utilized by the customer and vendor companies, and the degree to which IP can be accessed at all levels of the customer and vendor companies. If the customer company enters into contract with the vendor company with the purpose to jointly develop IP, the outsourcing contract must address all ownership and control issues during the partnering activities (U.S. Copyright Law 1976). Regardless of whether IP is single or jointly owned as dictated by the outsourcing contract, the restrictive covenants must be compatible with antitrust laws (Saunders 2003).

Warranty and Liability

A warranty is a promise that the resulting product or service from an outsourced function will be of certain quality, does not infringe upon any ownership rights within the outsourcing contract, and that the product or services will be sold free of any pretenses

(Brennan 2003). The outsourcing contract should provide the terms of warranty the vendor company must uphold with regards to providing the outsourced function to the customer company and should also detail the necessary steps of proper disclosure of warranty agreements to end users. Proper documentation and proof of warranty should be required by the outsourcing contract to protect the customer company and ultimately the end users from any issues concerning quality of the product or services.

Liability clauses govern the amount and type of legal liability that either party may incur as a result of the transaction. Liability issues often result from problems with warranties on provided products and services, stemming from quality and technicalities of the transaction between customer and vendor companies. With both companies involved in the outsourcing contract attempting to limit their total liability, it is important for the contract to set a reasonable and fair liability cap as to not favor one company over the other. With regards to the liability cap, it is important for the outsourcing contract to not put a cap on liabilities that do not involve issues of quality and warranty because the customer or vendor company could severely handicap themselves in recouping money lost due to more severe breach of contract, such as intellectual property infringement (Brennan 2003).

Terms for Disengaging

"Being locked into a long-term contract may complicate future mergers and acquisitions (Anonymous [A] 2004)" for the customer company therefore it must allow for "termination for convenience" if the relationship between a customer and vendor becomes unprofitable. The business relationship between a customer and vendor company may not always remain profitable in the long run, therefore it is essential that the outsourcing contract provide a framework for terminating the outsourcing relationship. The termination settlement should allow for the companies involved to recover the price of the functions being terminated and decide settlement expenses while protecting the companies from either one gaining an unjust economic advantage over the other (Worthington 1992).

Nondisclosure and non compete agreements are also recommended for regulating the post-contract environment, to protect the customer and vendor company's sensitive information and competitive advantage. Nondisclosure agreements protect the customer and vendor companies from a loss of proprietary knowledge and prevent either company's personnel from using any proprietary knowledge in future endeavors (Fitzpatrick and DiLullo 2005). The transfer of assets and staff must also be readdressed in the event of this type of relationship termination. These terms should be addressed within this key element of the outsourcing contract to avoid any legal battles that arise due to disputes over property, rights, and payments.

Method of Dispute Resolution

Naturally disputes arise within many customer-vendor relationships, but in theory the proper implementation of the key elements of the outsourcing contract should prevent most disputes. The outsourcing contract should anticipate the fact that disputes will occur and deal with this issue accordingly. The use of attorneys and the litigation process are very costly and can have harsh effects both directly and indirectly on the companies involved. Money and reputations are often squandered in lengthy courtroom disputes.

The outsourcing contract needs to take this into consideration and encourage the use of alternative dispute resolution (ADR) as the required approach to resolving issues between the customer and vendor companies. ADR is less risky, time-consuming, and costly than the litigation process, and most notably it lets the parties involved preserve their professional relationship while resolving a dispute (unless the dispute is concerning termination of the contract). It also results in finality, since the ruling resolving the dispute is usually not appealable in court. ADR is generally classified into three types: negotiation, mediation, or arbitration. Depending upon the preferred method of ADR as stated in the outsourcing contract, third-party representatives for each of the companies should be predetermined and named within the contract as well (Long 1994).

Key Elements of a Successful Customer-Vendor Relationship

The theoretical model for the ideal outsourcing contract between customer and vendor companies involves four main functions: performance, financial, human resource, and legal. Table 3 lists the key elements within each function then lists the problems associated when the specific key element is not sufficiently addressed or overlooked within the outsourcing contract. A majority of these problems are similar in nature, regardless of the function or key element it is associated with.

Function	Key Element	Associated Problems
Performance	Standards for quality and service levels	- Company objectives unmet - Purpose and nature of relationship may be unclear - Increase in costs to implement corrective measures - Delay in supply chain flow due to implementation of corrective measures - Dissatisfied end-users
	Performance incentives and penalties	- Companies involved settle for mediocrity in their performance and/or output - No real value gained by either company - Could foster consistent underperformance
	Communication and confidentiality	- Misguided management decisions - Direct contributor to the bullwhip effect - Increased costs for corrective measures or legal action - Sharing of trade secrets and proprietary information - Weakened competitive advantage
Financial	Costing and pricing	- Over- or under-spending within the budget or cost cycle - Costs inaccurately assigned - Underreporting of invoicing mistakes - Pricing inaccurately derived from costs - Overpayment by customer or end user for product or service - Non-payment of invoices - Lower profit margins
Human Resource	Transfer of staff	- Low morale of current employees - Underperformance of employees - Insufficient number of new hires and amount of hire training - Increase in costs for corrective measures - Loss of key personnel and specialized knowledge
Legal	Transfer of assets, includes IP	- Access to new technologies or processes not fully utilized - Insufficient budgeting to cover costs of transfer - Loss of revenue and competitive advantage - Increased costs
	Warranty and liability	- Discrepancies in expected and actual quality of product - Re-work time creates delays within supply chain flow - Fraudulent practices in offering warranty - Huge spending in settlement between customer and vendor companies or the companies and the end-users
	Terms for disengaging	- Loss of profit and increased costs by being "stuck" in contract - Missed opportunity for growth - Loss of market share - Cyclical problem cycle of underperformance and overspending plagues companies
	Method of dispute resolution	- Deterioration of business relationship - Unnecessary cost of legal fess and settlement - Unclear path towards settling dispute

Table 3. Key Elements of the Outsourcing Contract.

(Adapted from ILS Conference Proceedings, 2006)

CHAPTER VI

METHODOLOGY

This section describes the set of procedures used to conduct this research as well as the underlying assumptions of the particular procedure. This section discusses the sample used for this research, the instrument, the procedure for administering the instrument, how responses from the participants were analyzed, and the limitations of this procedure.

Sample

Due to the nature of information sought and problems associated with information confidentiality, potential interviewees were referred by professors based upon criteria provided: such as minimum experience, area of expertise, and availability. Therefore a convenience sample was used. All prospective interviewees' contact information was provided by the professors. All of the interviewees are contract specialists, having at least five years experience in this position and expertise in the defense industry and government contracting. The prospective interviewees were contacted via e-mail and presented with a brief discussion of the scope of the research as well as a statement of privacy. All persons contacted agreed to participate in the phone interviews and were scheduled accordingly.

Instrument

Given the nature of research in the area of outsourcing contracts, this study not only relies upon secondary data, or literature printed in peer-reviewed, scholarly journals, but is strengthened by primary data collected through interviews. An exploratory approach was taken towards the collection of information through the interview process. Two preliminary interviews were conducted with a single interviewee in the early stages of research and served as a pilot study of sorts. These preliminary interviews were used to refine the interview questions and procedure later used for this study.

Procedure

All interviewees were contacted via telephone at scheduled times and a structured interview was conducted. All interviewees were asked a standardized set of questions based upon the four functions and previously identified common elements of the outsourcing contract (as shown in Table 3). Their responses were recorded using a pre-printed standard form (as shown in Appendix A), separating responses by question. Responses were transcribed directly to the standard form by the interviewer. Each interviewee's responses were transcribed to separate forms.

Interview Questions

The interview consisted of five major questions (with questions 2, 3, and 4 having multiple sub-sections). The questions are provided below for the purpose of discussion.

1. What is your position within the company?

2. What is the nature of this position?
    a. How would you describe the company's role within the supply chain?
    b. How would you describe your involvement with contracts?

Interviewees were asked to identify their position within the company and describe their involvement with supply chain, outsourcing, and contracts. These questions helped to put their later answers into context.

3. In a past interview, the interviewee spoke about how in their particular industry they use a standard contract with set key elements that must be included within every contract. Translating this to your experience, do you find this is the case?
    a. What would you consider to be key elements, or the most important elements, of the outsourcing contract?
    b. If these contracts are tailored to fit each unique relationship, how so?

This question is based on interviewee responses in the pilot-test. It was used to show that it is understood that standardized contracts exist, but to help support or reject the idea, as expressed throughout the literature, that contracts must also be tailored to fit the nature of the industry or organizations involved.

4. I have identified four classifications of common functions within the contract, they are as follows: performance, financial, human resource, and legal.
    a. Do common elements exist within each function?
    b. If so, what are they?
    c. What common problems, if, any, do you associate with each function?

These questions gave interviewees a framework for their responses to identify the key elements within an outsourcing contract. Their purpose was for the interviewees' responses to either support or reject key elements identified throughout this research, and to possibly introduce any key elements that may have been overlooked. It was also important to have the interviewees verify the already-identified common problems associated with insufficiently addressing any of the key functions.

5. Do you have any comments concerning the relationship between the supply chain, outsourcing, and contracts that may help in my understanding of your responses?

This question was also used to help put interviewee responses into the context of this research. It was used with the purpose of the interviewee possibly providing an overall generalization or comment to clarify their responses.

Analysis

The interviewees' responses were consolidated and summarized for each question using the standard form, and either validated the model shown in Table 3 or provided additional insights into the outsourcing contract itself. For purposes of verification and validity, two professors volunteered to cross-reference the interviewees' responses against a list of objectives and conclusions provided to them and compare them to the conclusions made by the interviewer.

Limitations

- The sample used was one of convenience.
- Interviewees were limited to only one industry.

- Interviewee responses were transcribed by hand, while also conducting the interview, and therefore are subject to inaccuracies.
- Because the interviewees' responses were transcribed and interpreted by the interviewer, the responses were subject to a possibly biased interpretation.
- Due to the nature of the study, it did not rely upon any numerical or statistical data.

CHAPTER VII

ANALYSIS AND DISCUSSION OF RESULTS

Analysis of Results

The interviews were conducted with the intent of solidifying findings obtained through previous research. Being exploratory in nature, the interview questions were general and responses were broad. The first two questions ask the interviewees their specific position within the company they work for and ask them to describe the nature of their position, specifically in terms of their dealing with the supply chain and/or contracts. These questions were used to put their later responses into context.

The third interview question, concerning the use of a standardized contract (listed in Appendix A), was largely based upon the pilot-study interviews conducted early on in the research (L. Platz, personal communication, March 2006). Question 3 focused on the tendency for a particular industry to rely upon a predetermined set of contractual elements for all contract needs and whether or not the interviewee agreed with this scenario. All interviewees agreed that most contracts across a single industry will be relatively similar, but all also emphasized that the customer and vendor companies should tailor their contract to fit their specific needs and unique relationship.

The following two questions, questions 4 and 5 as listed in Appendix A, asked interviewees to elaborate more on the use of standard elements within the outsourcing contract. They were asked to identify what they considered to be "key elements" (within the context of their experience and managerial position) and how the key elements are tailored for each relationship. The elements identified fit three of the four major functions identified in Chapter 5: performance, financial, and legal. All interviewees also agreed that although these three key elements are similar, there is still room for the clauses within each of these elements to be tailored to meet the specific needs of each company – the company originating the contract and the company being contracted.

The next question in the interview questions was divided into four sub-questions. Each asked the interviewee to identify the key elements within each major function identified through this research (performance, financial, human resource, and legal) and also any problems commonly associated with each of them. None of the responses brought up any new elements unidentified in previous research, but all four interviewees emphasized the financial function, namely terms for costing and pricing and for invoicing and payments. Three of the four interviewees also considered the human resource function to be the least important to outsourcing contracts within their industry, stating it may be non-existent and appear only as an addendum. The four interviewees also emphasized miscommunication or non-communication as the most prominent problem existing between the supply chain members and provided various examples in the performance and financial functions. Some examples include the exceeding time constraints when reporting quality issues or the under-reporting of non-payment of invoices.

As a final question, the interviewees were asked to comment in general on the supply chain, outsourcing, and contracts in general, or to correct any misconceptions contained within our discussion as presented by the interviewer. One interviewee did respond by again noting the importance of adapting the contract to fit the context of the relationship among the customer and vendor companies.

The information obtained from the interviewees helped to reinforce previously identified key elements of the outsourcing contract and the statement that the outsourcing contract is imperative to the relationships among players within the supply chain. The information also made it more evident that the bullwhip effect is inherent in all supply chain relationships, in that the contract can only mitigate risk and not completely prevent all uncertainty. Upon analyzing the interviewee responses, it was realized that the outsourcing contract is not only purely legal in purpose, but also has a role in a business's successful outsourcing strategy.

The interviewees' responses wholly supported the thesis statement. They verified that:

1) a set of standard elements does exist for outsourcing contracts,
2) the outsourcing contract does dictate the nature of the customer-vendor relationship, and
3) insufficiently addressing contractual elements does lead to a common set of problems, most notably the bullwhip effect.

The major finding from this research is that a relationship exists between the outsourcing contract, essential to all customer-vendor relationships, and the bullwhip effect, which is inherent to all supply chains, and that this relationship must be further clarified.

Discussion of Results

It has been confirmed through data analysis that contracts are essential to all companies that have outsourced a function of the supply chain. It is proposed that having a weak contract can launch a systematic distortion of information along the supply chain. The common symptoms of such variations can appear as excessive inventory, poor product forecasting, instability in costs, unfulfilled orders, and uncertainties in planning (Lee et al. 1997). The bullwhip effect, or the result of these distortions, is most commonly caused by miscommunication or ineffective system of communication (as evidenced by the common problem of non-communication of problems), and/or inaccuracies in demand. Managing risk inherent to the supply chain is challenging because these individual risks are usually interconnected. For example, a vendor company that frequently has quality problems creates a trickle-down effect, this in turn delays further production, the replenishment of inventory, delays delivery dates, and causes customer demands to be unmet. These delays are all due to the re-work required in this scenario. Disruptions can also vary in frequency, time, and range (Chopra and Sodhi 2004). The uncontrollable factors that cause the bullwhip effect must also be acknowledged. These may include:

- Natural disasters/unforeseen events
- Labor strikes
- Exaggerated demand by customers/cancellation of orders by customers – this refers to customers that exist farther down the supply chain

- Inaccuracy at POS leads to inaccuracies in demand – this is not necessarily controlled within the outsourcing contract, but it can be controlled by the retailer, much to the retailer's benefit

Because supply chains are seldom constructed in a linear model this distortion occurs between all players and is passed on in both directions. The supply chain is weakened and more susceptible to the bullwhip effect when the time it takes for material to flow from one end of the supply chain to the other is long; this can be attributed to increased globalization and use of sub-contracting (Christopher and Lee 2004). This being said, the bullwhip effect affects the entire dynamic of the relationship amongst all entities, not only those directly involved within a specific contract. It is then evident that these common problems all propagate the bullwhip effect, creating interconnectivity between the bullwhip effect and the outsourcing contract itself. The bullwhip effect eliminates the effectiveness of the contract at some level. The outsourcing contract is used dictate the requirements between customer and vendor companies. When these requirements are not met due to the bullwhip effect, the purpose of the outsourcing contract is diminished. Decreased effectiveness of the outsourcing contract leads to unmet terms, parties straying from the dictated relationship, conflict among parties (especially if one party has not realized the extent of the problem due to lack of communication), and a devaluation of the contract in general (both monetarily and in principle).

On the other hand it needs to be determined if the outsourcing contract can help alleviate the influence of the bullwhip effect. This all circles back to the need for a strong outsourcing contract due to the relationship between the strength of the contract and the magnitude of the bullwhip effect felt within the supply chain. The outsourcing contract limits risk exposure and therefore makes the relationship more efficient (Christopher and Lee 2004). A complete contract increases the control each party has over operations, helping both parties recognize problems and make changes quickly. A successful contract also forecasts associated risks within the nature of business-to-business relationships and the nature of outsourcing itself; the contract's terms will attempt to mitigate supply chain risk (Chopra and Sodhi 2004). Increased control also helps to eliminate slack and information gaps within the supply chain, helping to lessen the bullwhip effect. Having an effective outsourcing contract also implies that "synchronism" exists among all players within the supply chain, meaning all players are marching in step and making decisions based upon data obtained as close to real time as possible (Christopher and Lee 2004). If a strong outsourcing contract does not exist, the contract could be devalued as a whole and the strength of the bullwhip effect intensified.

Effective communication and demand forecast updating work hand-in-hand, with demand forecasting relying upon each player's perceptions and observations, based on communication of information, to signal future product or service demand (Lee et al. 1997). A strong outsourcing contract should construct a communication infrastructure between the customer and vendor to continually share demand data and allow for accurate management demand forecasting decisions. Creating a strong outsourcing contract creates a win-win situation for the customer and vendor companies.

The outsourcing contract is formed with the purpose of avoiding problems such as the bullwhip effect and to prevent uncertainty through the sharing of information, yet the bullwhip effect still exists to some extent within all supply chain models because uncertainty can never be completely eliminated, only reduced. This suggests that the bullwhip effect is unavoidable. The importance of the outsourcing contract is not only to dictate the customer-vendor relationship but also to help the customer and vendor company cope with the bullwhip effect. A strong outsourcing contract is essential to both preventing and alleviating the bullwhip effect.

CHAPTER VIII

CONCLUSION

Organizations are increasingly deciding to outsource functions of the supply chain with the goal of improving efficiency and cost effectiveness of the organization. The creation of the customer-vendor relationship during this process is contract intensive, with the outsourcing contract dictating the nature of this relationship. This contract must contain a specific set of key elements, as proposed in Table 3, which effectively describe all expectations and details for the customer-vendor relationship and also capture the general nature of outsourcing and the supply chain model as a whole. The customer and vendor companies should attempt to identify the best mix of the standard key elements, while sufficiently addressing organization-specific requirements. While the key elements of the outsourcing contract are applicable to most every organization involved with outsourcing a function of the supply chain, contracts should also be adapted to reflect the specific nature of the organizations involved and their respective industries. This approach allows the customer and vendor companies to form the best possible relationship.

There are multiple problems associated with insufficiently addressing or overlooking any key function or key element of the outsourcing contract, with a majority stemming from a poorly designed contract. The most common problems can be related to the bullwhip effect, thus demonstrating interconnectivity between the bullwhip effect and the outsourcing contract. It is therefore evident that the outsourcing contract is important to mitigating uncertainty within the supply chain and also minimizing the bullwhip effect.

Recommendations for Future Research

This research has brought together many ideas, as presented throughout the reviewed literature, and has provided a foundation that should be expanded upon. Each key element identified encompasses so much with regards to the customer-vendor relationship that a more extensive interview process with more detailed interview questions could reveal greater insight into the implications each key element has for the organizations involved (both when the key element is addressed or when it is overlooked). Due to time constraints and the nature of this research, the number of interviewees used was limited and the interview process fairly restricted.

Future research should also address the nature of the outsourcing contract within a variety of industries to better understand the elements and problems as presented by this research, and to also examine how these key elements are adopted into the outsourcing contract to meet these industry's unique demands. By segmenting this research by industry type, the proposed model could be translated to reflect the distinctive requirements and environment of each industry.

This research presents the major cause of the bullwhip effect as an "ineffective system of communication," although this is true, this is a limited definition. Future research should also consider other major causes of the bullwhip effect, such as demand forecast updating, order batching, price fluctuation, and rationing or shortage gaming (defined by Lee et al. 1997). Examining these causes in effect expands the definition of the bullwhip effect and may further strengthen the relationship between the bullwhip effect and the outsourcing contract.

APPENDIX A

STANDARDIZED FORM USED FOR RECORDING INTERVIEWEE RESONSES

Date: ____________________

1. What is your position within the company?

2. What is the nature of this position?

- How would you describe the company's role within the supply chain?

- How would you describe your involvement with contracts?

3. In a past interview, the interviewee spoke about how in their particular industry they use a standard contract with set key elements that must be included within every contract. Translating this to your expertise, do you find this is the case?

3a. What would you consider to be "key elements", or most important elements, of the contract?

3b. If these contracts are tailored to fit each unique relationship, how so?

4. I identified four classifications of common functions within the contract, they are as follows: performance, financial, human resource, and legal.

4a. Do common elements exist within each function?
4b. If so, what are they?
4c. What common problems, if any, do you associate with each function?

- Performance: service levels and quality, performance incentives and penalties, framework for communication, and rules for confidentiality.

- Financial: costing and pricing

- Human Resource: transfer of staff and issues concerning in-house staff.

- Legal: transfer of assets, IP rights, warranty and liability, terms for disengaging, and method of dispute resolution.

5. Do you have any comments concerning the relationship between supply chain, outsourcing, and contracts that may help in my understanding of your responses?

APPENDIX B

SUMMARY OF INTERVIEW RESULTS

1. What is your position within the company?

Two interviewees hold positions as contract managers and two hold positions as senior contract negotiators.

2. What is the nature of this position?

To protect the confidentiality and the interviewees' interests, the responses to this question will not be shared.

- How would you describe the company's role within the supply chain?

  The company acts as a coordinator between supply chain players, often acting as a negotiator and manager between parties.

- How would you describe your involvement with contracts?

  The interviewees described their involvement with contracts as having to review contract requirements, negotiate contracts, and sometimes act as a third party between customer and vendors (manage the contractual relationship in this situation).

3. In a past interview, the interviewee spoke about how in their particular industry they use a standard contract with set key elements that must be included within every contract. Translating this to your expertise, do you find this is the case?

Due to the nature of the industry, this is definitely the case, but this does not mean that all contracts are exactly the same across the board.

3a. What would you consider to be "key elements", or most important elements, of the contract?

Due to the nature of the industry, intellectual property and patent rights are one of the most important elements that can be in a contract. Description of costs, payments, and invoicing are also important. The interviewees also responded that a good contract should also thoroughly describe the goods and services that are to be provided/completed during the project.

3b. If these contracts are tailored to fit each unique relationship, how so?

Contracts will reflect the differences between the companies and projects/jobs that are involved in the relationship. By customizing (to an extent) the contract to reflect the uniqueness of each relationship it should in turn be more successful.

4. I identified four classifications of common functions within the contract, they are as follows: performance, financial, human resource, and legal.

4a. Do common elements exist within each function?

Common elements exist for each function; the most frequent answers will be listed according to their related function.

4b. If so, what are they?

4c. What common problems, if any, do you associate with each function?

The most frequently reported problems will also be listed below according to their related function.

- Performance: service levels and quality, performance incentives and penalties, framework for communication, and rules for confidentiality.

  Standards/specifications for quality are the most important aspects of this function. A schedule of specific dates and times projects are to be completed (including shipping and delivery) is also important. The major problem associated with this function if a lack of notification between parties about problems that may arise with quality or with the process itself. It is common that many problems go unaddressed between customer and vendor.

- Financial: costing and pricing

  Requirements for timely payments and establishing penalties for late payments are also important. Many companies have payment problems, whether it is attributed to the slow bureaucratic process of processing and sending a payment or unclear standards for payment deadlines. Communication between parties is also key here. Time frames for the notification between companies should be set up in the event of mis-billing or non-payment.

- Human Resource: transfer of staff and issues concerning in-house staff.

  This was perceived to be the least important function of the outsourcing contract. Although these elements may not always be included within the outsourcing contract (depending on the nature of the industry), terms for guaranteed work for employees and terms securing key people (those with specialized knowledge or management skills) in the project are the most common. No problems were identified for this function.

- Legal: transfer of assets, IP rights, warranty and liability, terms for disengaging, and method of dispute resolution.

  Intellectual property rights were again emphasized, as well as method of dispute resolution. Closure criteria, or terms dictating when the contract is complete, should also be included within the contract. Clearly identifying the legal nature of the relationship between customer and vendor helps them to avoid messy disputes concerning intent, confidentiality, and provides a certain level of comfort to both parties involved.

5. Do you have any comments concerning the relationship between supply chain, outsourcing, and contracts that may help in my understanding of your responses?

Again, emphasis was placed on tailoring the contract to fit the needs of both the customer and vendor company. Relationships change with the nature of the job and industry and the contract must reflect this, yet also contain a comprehensive set of key elements.

REFERENCES

Anonymous [A] (2004). Advice on outsourcing. *International Journal of Productivity and Performance Management, 53*, 654-655.

Anonymous [B] (1997). Put it in writing. *The Journal of Business Strategy, 18*, 51.

Anonymous [C] (2003). Six ideas for managing contracts. *Community Banker,* 16.

Black, H. C. (1979). Contracts. In *Black's Law Dictionary* (p. 277-278 and p. 291-295). Minnesota: West Publishing Company.

Bowersox, D.J., D. J. Closs, & M. B. Cooper (2002). *Supply Chain Logistics Management* (International ed.). New York: McGraw-Hill Companies, Inc.

Brennan, T. M. (2003). Purchasing software: what corporate counsel need to know. *Intellectual Property & Technology Law Journal, 15,* 6-9.

Chopra S. & M. S. Sodhi (2004). Managing Risk to Avoid Supply-Chain Breakdown. *MIT Sloan Management Review, 46*, 53-64.

Christopher M. & H. Lee (2004). Mitigating supply chain risk through improved confidence. *International Journal of Physical Distribution & Logistics Management, 34,* 388-396.

Davis, R. (2004). Setting up and managing outsourcing contracts to deliver value and accommodate change. *Journal of Corporate Real Estate London, 6,* 301-307.

Debow, Y. (1994). Anatomy of an outsourcing contract. *Insurance & Technology, 19,* 16-17.

DiDonato, S. L. (1993). Alternative methods to resolve contract disputes: Approaches to effective prevention, management, and settlement of construction contract claims. *Transactions of AACE International*, G.2.1-2.2.

Fitzpatrick, W. M. & S. A. DiLullo (2005). Strategic alliances and the management of intellectual properties: the art of the contract. *S.A.M. Advanced Management Journal, 70,* 38-45.

Flynn, M. J. (1999). Outsourcing 101: a few simple instructions. *Facilities Design & Management, 18*, 38-41.

Funk, J., D. Sloan, & S. Zaret (2003). Beware the dangers of outsourcing. *Optimize, April,* 68-72.

Glassner, K. (2000). Contract disputes: the role of ADR. *Dispute Resolution Journal, 55,* 50-55.

Kweku-Muata, B. & W. E. Sullivan (2003). Designing effective incentive-oriented contracts for application service provider hosting of ERP systems. *Business Process Management Journal, 9,* 705-721.

Lankford, W. M. (2004). Supply Chain Management and the Internet. *Online Information Review, 28,* 301-304.

Lee, H. L., V. Padmanabhan, & S. Whang (1997). The Bullwhip Effect in Supply Chains. *Sloan Management Review, 38,* 93-102.

Lee, M. (1996). IT outsourcing contracts: practical issues for management. *Industrial Management + Data Systems, 96,* 15-20.

Long, A. (1994). Resolving disputes while preserving relationships. *National Contract Management Journal, 25,* 43-50.

Mann, C. L. (2004). What global sourcing means for U.S. IT workers and for the U.S. economy. *Communications of the ACM, 47,* 33-37.

McDougall, P. (2005). The importance of an outsourcing prenup. *InformationWeek, May,* 26.

Moore, M. (2002). Points of contract. *Supply Management, 7,* 39.

Platz, L. A. & C. Temponi (2006). *Outsourcing the Supply Chain: Defining the Optimal Contract between Customer and Vendor.* Paper presented at the ILS Conference Proceedings. Lyon, France.

Power, M., C. Bonifazi, & K. C. Desouza (2004). The ten outsourcing traps to avoid. *The Journal of Business Strategy, 25,* 37-42.

Sadler, I. (2002). Beware the scope creep: establishing service levels. *International Tax Review, 5,* 22.

Saunders, K. (2003). Intellectual property rights in negotiating and planning a research joint venture. *Marquette Intellectual Property Law Review, 7,* 75-97.

Scozzafava, L. (2004). Building a better contract. *The American City & Country, 119,* 34-37.

Siegel, G. B. (2000). Outsourcing personnel functions. *Public Personnel Management Washington, 29,* 225-236.

Smith, G.V. & R.L. Parr (1992). Valuation of intellectual property and intangible assets. *Corporate Growth Report Weekly, December,* 6416.

Song X. & X. Cai (2005). On optimal payment time for a retailer under permitted delay of payment by the wholesaler. *International Journal of Production Economics, 103,* 230-245.

Steele, M. D. & P. A. Shannon (2005). Detecting hidden fees in GMP. *AACE International Transactions Morgantown,* PM 71-74.

Stevenson, W.J. (2007). *Operations Management.* McGraw-Hill, NY. Pg. 507

Texas Jurisprudence, 3d (1993). Contracts to Contribution and Indemnification. (Vol. 14, p. 1-16). San Francisco: Bancroft-Whitney Co.

Thaker, H. (2005). Get Better Service. IEE Information Professional, June/July. Retrieved October 24, 2006, from http://www.outsourcing.com/content.asp?page= 01b/articles/process/index.html

The Outsourcing Institute. (n.d.). Retrieved October 24, 2006, from http://www.outsourcing.com/content.asp?page=01b/index.html

U.S. Copyright Law (1976). *17 USCA sec. 101.*

Uttley, M. R. (2004). Private contractors on deployed operations: the United Kingdom experience. *Defence Studies, 4,* 145-165.

Warburton, R. D. (2004). An Analytical Investigation of the Bullwhip Effect. *Production and Operations Management, 13,* 150-160.

Wisner, J. D., G. K. Leong, & K. Tan (2005). *Principles of Supply Chain Management: A Balanced Approach.* Thomson South-Western, OH. Pgs. 12-17

Worthington, M. M. (1992). Management accounting: as military downsizes, contract termination becomes a challenge. *Journal of Accountancy, 173,* 88-90.

Yost, J. & W. K. Harmon (2002). Contracting for information system outsourcing with multiple bidders. *Journal of Information Systems, 16,* 49-59.

Zhu, Z., K. Hsu, & J. Lillie (2001). Outsourcing - a strategic move: the process and the ingredients for success. *Management Decision, 39,* 373-378.

VITA

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