

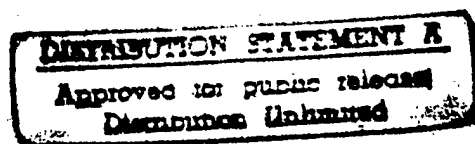


AN ANALYSIS OF
THIRD PARTY LOGISTICS AND
IMPLICATIONS FOR USAF LOGISTICS

THESIS

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AFIT/GTM/LAL/96S-15



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Thomas J. Thompson

Captain, USAF

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Abstract

This study was undertaken to determine the current trends in third party logistics. The Air Force Material Command Lean Logistics office sought information for improving USAF logistics support. The purposes of this study were to report results of third party logistics use, determine characteristics of successful third party relationships, and to discuss the implications for USAF logistics managers.

A qualitative research methodology was chosen using multiple case studies. Logistics managers from eight third party users and ten third party providers were administered an extensive research protocol.

The results revealed an industry which is growing rapidly. While the momentum for third party logistics use was strong, most managers cautioned for the use of an incremental approach to using third party logistics. This permits an easier transition for the using organization and leaves the option open to return logistics in-house if the provider is lacking.

The majority of third party providers in this study were not interested in DoD business. Providers indicated that the perceived difficulty of competing, administering, and renewing a DoD contract was not worth the income generated. This may be restricting DoD's accessibility to firms providing the best service and/or a lower cost.

AN ANALYSIS OF THIRD PARTY LOGISTICS AND IMPLICATIONS FOR USAF LOGISTICS

I. Introduction

General Issue

In the past decade the Department of Defense (DoD) has undergone vast reductions in the amount of manpower and funding available to accomplish its changing missions (Air Force, 1996). These reductions have led to the search for better ways of accomplishing those tasks that remain. In the logistics area some have called for adoption of successful private sector business practices to improve DoD and Air Force logistics services (Pyles and Cohen, 1993, GAO, 1996). The goal of applying best business practices to Department of Defense logistics functions is to provide better service to customers at a lower cost.

Background

The choices available today to purchasers of logistics services are much different than the choices of twenty years ago. Purchasers can find a wide variety of services, provided by many more companies, than in the past (Sheffi, 1990:32). The number of companies buying these services is increasing rapidly (Gardner and Johnson, 1994:835). These companies perceive advantages to the use of these services (Bardi and Tracey, 1991:19). The Department of Defense is investigating whether its purchase of these services would benefit DoD operations (Jones, 1995:28).

Private Business Experience.

The business environment of the early 1980s helped create the need for different logistics services. American companies were experiencing growth in global markets. They were also starting to focus on the entire supply chain of their operations. The additional expansion and supply chain management required hiring additional expertise for the company. Increasingly, these experts were hired on by contract rather than being employed by the company (Sheffi, 1990:28).

At this time the structure of business in the United States was also changing. Many mergers occurred which created larger corporations. The multiple logistics departments that remained after the mergers forced the realization of the need for logistics experts to lead them. On the other hand, the remaining, smaller companies did not have the economies of scale to achieve logistics efficiencies. The effect was that both of these type of companies looked to others to provide expertise (Bowersox et al., 1989:17).

Continuing competitive pressure led some companies to contract for others to provide services that were previously performed in-house (Wilcox, 1995:53). While contracting for logistics services was not new, the emphasis grew larger than just contracting for individual services. Entire departments or functions were sometimes provided by contractors. This trend, called outsourcing, has gone from "small-scale, limited action to large-scale, planned actions that fit into an organization's overall strategy" (Moore, 1996:2).

When deciding whether or not to outsource a particular function many firms chose to concentrate their resources on their core competencies. These are business areas where

a company can “achieve definable preeminence and provide unique value for customers” (Quinn and Hilmer, 1994:43). This means that companies find which successful parts of the company set it apart from its competitors. These core competencies will always remain in-house. All other company functions are possible candidates for outsourcing (Quinn and Hilmer, 1994:43).

There are several advantages to outsourcing functions, assuming outsourcing is cheaper than retaining them. First, the funds saved may be used to strengthen the core competencies. This leads to a second advantage, that well-developed core competencies become a barriers for competitors. Third, the company outsourcing can leverage the supplier’s expertise and resources for its own use. Last, the company who is outsourcing will remain more flexible as less capital is tied up in fixed assets. The company can enter or leave markets at will by utilizing other’s resources (Quinn and Hilmer, 1994:43).

While all of these advantages are possible through outsourcing, companies have found pitfalls as well. Some companies have found that once an area is outsourced there may not be any in-house expertise left. This expertise may be needed to monitor the contract or, used if the decision is made to return that function back within the company (Quinn and Hilmer, 1994:52). Another concern during outsourcing is the loss of control over the processes outsourced. The concern of respondents in one logistics outsourcing study was that providers may not provide the quality of service desired, nor be as responsive to requests as company owned employees (Bardi and Tracey, 1991:19).

The benefits and concerns presented here must be weighed by the firm considering outsourcing. If the decision is to outsource logistics functions there are many choices. The growth of the contract logistics industry that provides these services is discussed next.

Contract Logistics Services.

While changes were taking place in American businesses the deregulation movement of the 1980's caused major changes in the logistics environment as well. The deregulation of transportation allowed carriers to charge market-based rates and develop new services (Sheffi, 1990:28). At the same time, customers were demanding better service to shorten the order cycle or support just-in-time systems. The globalization of the marketplace also increased the demand for different logistics services (Sheffi, 1990:29). To meet demand, logistics providers began to add services above their traditional offerings. Carriers offered broader intermodal services and electronic tracking of cargo. Warehouses added inventory control, minor assembly, and labeling services (Gardner and Johnson, 1994:835). The ability to add many of these services was aided by the increased availability of more powerful computers (Sheffi, 1990:30).

Established logistics providers added services to fill the needs of customers and to differentiate themselves from their competition. Some of these companies started their own logistics services subsidiaries, while new companies were formed to offer logistics expertise. Both of these companies are known as third party logistics providers. Maltz and Lieb define these providers as follows:

“A third party logistics provider is a company which supplies/coordinates logistics functions across multiple links in the logistics supply chain. The company thus acts as a ‘third party’ facilitator between seller/manufacturer (the ‘first party’) and buyer/user (the ‘second party’).” (Maltz and Lieb, 1995:45)

The expansion of these services came about at the same time that logistics users were seeking to outsource portions of their companies. Third party providers are selling logistics services at less cost because of the economies of scale they gain from having many customers (Maltz and Lieb, 1995:51). As a result, many companies have turned to third party providers, who now supply "...over 20 % of the principal logistics functions (transportation, warehousing, materials management, and associated administration like freight payment), as opposed to 10% in 1982" (Gardner and Johnson, 1994:835).

The Military Environment.

Just as the business environment has undergone rapid changes, the Department of Defense has had to make adjustments as well. The break-up of the former Soviet Union has changed the roles and policies of the United States military (HQ USAF, 1995:10). Some of the results have been reduction in funding (Air Force, 1996:51) and available manpower (Air Force, 1996:41). These factors have placed more emphasis on accomplishing the DoD mission more efficiently, including logistics (HQ USAF, 1995:10).

To meet the challenges of the current environment the Department of Defense has developed three goals with regard to logistics:

- Reduce response time to get the items to the customer faster
- Develop a seamless logistics system to improve related functions that must work together

- Streamline logistics infrastructure to meet reduced manpower and funding targets (HQ USAF, 1995:10).

These goals are similar to those of private sector firms (Jones, 1995:28).

To meet these goals, some have called on the DoD to outsource those functions which are not core competencies (Camm, 1993, DoD, 1996). When outsourcing, the Department of Defense shares the same concerns that private sector firms have, including: can the expertise be brought back in-house if required and loss of control over functions because of lack of internal expertise (Jones, 1995:28).

In the Air Force, weapon systems logistics are coordinated by the Air Force Materiel Command (AFMC). To meet the Department of Defense goals the Air Force and AFMC have developed Lean Logistics. Lean Logistics is “an umbrella concept that describes the application and adaptation of the most successful public and private business practices to the USAF logistics system” (HQ USAF, 1995:17). Lean Logistics seeks to reduce system-wide life cycle costs while maintaining high aircraft availability (HQ USAF, 1995:13). To date, studies to support these efforts have concentrated on improvements and outsourcing of the USAF depot maintenance capabilities (GAO, 1996, Pyles and Cohen, 1993). This study is concerned with the current practices of third party logistics providers and how the Air Force Lean Logistics program can benefit from using their services.

Specific Problem

The Air Force Materiel Command is seeking ways to improve service and save funds. These goals must be met while providing complete logistics support to Air Force units. Many American businesses have had similar problems and chose to contract some, or all, of their logistics functions to third party providers. The specific problem is to determine the current trends in contract logistics for possible application to Air Force operations.

Purpose of Study

The purpose of the study is threefold:

1. To report the results of the experience case study organizations have had with third party logistics relationships.
2. To determine characteristics of successful contract relationships by questioning both users and providers of third party logistics.
3. To propose areas for possible Air Force implementation and how the Air Force could take advantage of commercial experience.

Contributions and Implications for DoD Managers

By comparing the experiences of users and providers of third party logistics this study seeks to make the following contributions to the Department of the Air Force and the Air Force Materiel Command:

1. Record the current practices of organizations outsourcing logistics functions. This information will then be available to support decisions regarding outsourcing these

areas in the Air Force. The background information gathered can aid decision makers by being a comprehensive resource of experiences and lessons learned.

2. Identify attributes that would aid in the proper selection of a third party logistics provider. A compilation and analysis of experiences of business and government users of third party logistics, which have worked best in the past and may be adopted by the Air Force with some expectation of success, will facilitate this process.

Research Approach

The method used to gather and process data was case study research using multiple cases. The case study method was chosen to gather more in-depth information about the organizations than a survey-type of investigation would have revealed. The purpose of multiple case studies was to detect comparative trends between the organizations involved in third party logistics. The research used a three-part design to perform an analysis of the current use of third party logistics. The parts included:

Validation and selection - The research protocol was reviewed for sufficiency and potential respondents identified by purposive sampling.

Data collection - Both users and providers of third party logistics were interviewed using the research protocol.

Data analysis - The data was analyzed to find trends which indicated the current status of third party logistics use in the organizations interviewed.

Research Questions

The research questions supported the purpose for the study and assisted in comparing the logistics outsourcing policies of private sector organizations with each

other and with the logistics policies of the Department of Defense. To guide development of research propositions the following six research questions were developed:

1. What logistics functions have been outsourced successfully?

This question is posed to find those logistics functions that have had good outsourcing results in the past. Conversely, outsourcing failures will also be reviewed. The answers to this question can be used to determine which functions are not good candidates for future outsourcing.

2. Why were the logistics functions outsourced?

Once the types of logistics functions outsourced is found this question turns to why they were outsourced. The organizations studied may have specific reasons for outsourcing these functions. Knowing these reasons may help others facing these decisions.

3. What internal processes were used that led to the conclusion of hiring a logistics provider?

Experienced third party logistics users have had to go through a management decision process to determine if a provider is required and then to hire one. A goal of the research is to uncover the best methods to carry out this process.

4. How is the performance of the logistics provider evaluated?

Answers to this question should indicate how the third party logistics provider is measured. Once measurement procedures are in place the success of the business relationship may be determined. Both the measurement criteria and success of the association are important factors to those implementing third party relationships.

5. What services are third party logistics companies providing to the Department of Defense?

The research is directed toward compiling experiences of Department of Defense outsourcing to form a source of information for future use.

6. How is the relationship between a provider and the Department of Defense different from that of a provider and a private sector customer?

The information gained from the questions above will be compared to determine any differences between private sector and Department of Defense logistics outsourcing.

Research Propositions

Research propositions form the basis for what the researcher expects to observe when gathering data for the study. The propositions below were developed for this study.

They are stated in the null case first and the predicted observation follows:

- | | |
|----------------|--|
| Proposition 1: | The services contracted to third party logistics providers vary from organization to organization |
| Predicted: | The organizations who utilize third party providers contract for comparable services. |
| Proposition 2: | The reasons for hiring third party logistics services varies from organization to organization. |
| Predicted: | The organizations who utilize third party providers do so for similar reasons. |
| Proposition 3: | That organizations choosing whether to utilize third party providers will decide using like methods |
| Predicted: | The organizations considering outsourcing logistics functions each have a different process for determining if a provider is required. |
| Proposition 4: | That organizations seeking a third party logistics provider will use similar criteria and reasoning when making the selection. |
| Predicted: | The organizations considering outsourcing logistics functions each have different criteria and reasoning for selecting a provider. |

- Proposition 5: Organizations purchasing logistics services calculate the success of the relationship similarly.
- Predicted: The organizations currently outsourcing logistics functions have different evaluation criteria for determining the success of their provider.
- Proposition 6: The services provided to government organizations by third party logistics companies are different than those provided to the private sector.
- Predicted: Government organizations will purchase the same services that private sector organizations purchase.
- Proposition 7: The relationship between government organizations and third party logistics providers is the same as that between private sector firms and providers.
- Predicted: A different relationship will develop between government purchasers of logistics services, and their providers, than the relationships found in the private sector.

Scope and Limitations

The scope of the study reduced the type of organizations that were contacted for investigation as case studies. When studying third party logistics users, the primary concern of the research was physical distribution of the organization's products. The subjects were restricted to those that were purchasing services relating to the stocking, storage, or shipment of goods. The providers of logistics services studied were confined to companies that owned the assets, asset-based, used to accomplish their services. Further, the providers chosen were those which fulfilled these services by stocking, storing, or shipping of the customer's products. Some providers act only as consultants to recommend improvements to their customer's distribution management. These non-asset-based consultants were not considered in this study.

Because of the scope of the study, its applicability is limited to organizations similar to those studied. These organizations are in the private or public sector and require a physical distribution system to deliver products to internal or external customers. There are other logistics services, beyond physical distribution, which these results are not intended to address. In addition, only logistics outsourcing and logistics third party providers were the subject of this research. The conclusions of this study may not apply to other areas of outsourcing.

Assumptions

An assumption of the study was that private sector companies derive benefits from contracting for logistics services. These benefits were: improvements in the cost of the function contracted, improvements in customer service, or both. It was further assumed that if the Air Force contracts similar logistics services it would gain the same types of benefits.

Chapter Summary and Organization of the Research

This chapter presented the Department of the Air Force problem of reduced funds to support logistics operations and its desire to review commercial practices for potential adoption. The specific problem, purpose, and contributions of the study begin this chapter. To investigate solutions to the problem a multiple case study approach was taken using a three-part research design of validation and selection, data collection, and data analysis. This method was described next along with the research questions, formed to assist in data gathering and comparison of the organizations studied. Research

propositions of observations expected during the study were identified next. The scope and limitations, and study assumptions complete the first chapter.

Chapter Two is a literature review which initially describes the core competencies of private sector companies and how they may come to view logistics as a candidate for possible outsourcing. A similar treatment of the DoD core competencies and outsourcing follows. Third party logistics development and use is also discussed.

Chapter Three explains the research methodology. A qualitative method was chosen using multiple case studies. A three part research design of validation and selection, data collection, and data analysis was used to implement the methodology. An explanation of the research propositions and research variables concludes the chapter.

The results of case study research are presented in chapter Four. Each proposition is individually accepted or rejected after analyzing data gathered during the case studies.

In chapter Five answers to the research questions are provided. There are also conclusions drawn from the data and notes about their applicability to the United States Air Force.

II. Literature Review

Introduction

This chapter discusses the overall environment in which the use of contract logistics operates. The chapter begins with an explanation of core competencies of corporations and the characteristics of those competencies. Once these are determined there may be a decision of whether to outsource some functions. The reasons for and against this strategy are presented next. The Department of Defense is also an organization that can identify its core competencies; an attempt to identify them and possible outsourcing candidates follows. Last, many organizations have identified logistics functions as non-core activities and outsourced responsibility for their completion. A discussion of how this has affected the growth of the third party logistics industry, possible drawbacks, and questions to aid the process conclude the chapter.

Background

The Department of Defense (DoD) today is facing major changes, with initiatives underway to improve how the DoD operates and to reduce costs. These changes were brought about by the evolving world political situation which has created a sequence of responses from the United States. Threats to United States interests have changed defense strategy from preparing for a European or global war to smaller major regional conflicts (MRCs) that could happen anywhere in the world (HQ USAF, 1995:10).

Additionally, the funding to prepare DoD for all missions, including these MRCs, has been reduced as well from \$403.5 billion in 1986 to 289 billion in 1995 (in constant fiscal 97 dollars). This is a reduction of over 28 percent (Air Force, 1996:51). In terms of manpower there has been a reduction of 24 percent from 2,065,000 to 1,519,000 between

the years 1986 and 1995 (Air Force, 1996:41). In the face of these reductions and to continue the current tempo of operations, some have called for the DoD to adopt management practices of successful American businesses (Pyles and Cohen, 1993, GAO, 1996).

American businesses are undergoing a similar upheaval in the environment in which they operate. Their markets have expanded to include many overseas customers. At the same, time foreign competitors are increasing their sales in the United States (Sheffi, 1990:28). U.S. companies have taken many steps to remain competitive including “downsizing” or “rightsizing” their organizations. Normally this calls for a reduction in personnel through reducing layers of management or by letting contractors provide some functions rather than in-house personnel. But first the company must identify what areas to focus on. Some have consciously decided to concentrate on their core competencies (Sheffi, 1990:29).

Core Competencies in the Private Sector

The core competencies of corporations are often mentioned in current business management articles because of their link to the popular subject of outsourcing. Core competencies are areas where a company can “achieve definable preeminence and provide unique value for customers” (Quinn, et al., 1990:79). These are areas where the company performs best and which the company should cultivate to become or remain an industry leader. The current trend is to first identify the core competencies of an organization; then areas that are not core are considered as candidates for outsourcing. The important point is that the core competencies must remain within the company and cultivated to achieve future successes.

For determining which organization competencies are core, Prahalad and Hamel offer three tests. First, a core competency should provide access to a wide variety of markets. Second, the core competency should make a significant contribution to the perceived customer benefits of the end product. The last characteristic of a core competency is its difficulty for competitors to imitate (Prahalad and Hamel, 1990:83-84). These authors go on to note that few companies will identify more than five or six of these fundamental competencies (Prahalad and Hamel, 1990:84).

Similarly, Quinn and Hilmer present seven characteristics of effective core competencies:

1. Skill or knowledge sets, not products or functions - Core competencies should cut across traditional functional lines. These competencies will be based on the particular knowledge required for many products.
2. Flexible, long-term platforms, capable of adaptation or evolution - Companies must build the specific knowledge into a dominating skill that can be used over time.
3. Limited in number - Managers should specify a few core competencies that they will concentrate on.
4. Unique sources of leverage in the value chain - Organizations must find openings in markets where the company's unique qualifications can be used with the most effectiveness.
5. Areas the company can dominate - The core competency will be an area where the company can bring more assets to the market than its competitors.

6. Elements important to customers in the long run - At least one core competency should be in an area that directly relates to serving its customers. An analysis of customers and their value chains is required.

7. Embedded in the organization's systems - One or two talented personnel or functions cannot hold all the knowledge of the core competency. The ability to use the core competency should be established throughout the company (Quinn and Hilmer, 1994:45-47).

Core areas, identified using these criterion, will be kept in-house and refined.

These few areas form the central knowledge of the company. They will not be outsourced because that information, technology, or service makes the company unique. To release knowledge of the core competency is to lose that ability to differentiate the company from the competition.

The characteristics above are also used to establish the core competencies of private sector organizations. But, the emphasis on core competencies also requires a change in management philosophy. Previously, management would drive individual business units to be best in their field. This new approach calls for the development of certain resources or services that can be used throughout the company. Organizations that have independent business units may want to restructure or redirect them. The goal is to change from distinct products in these business units to products that are structured around the core competencies. Once these are established the next step many companies are taking is to determine if it is beneficial to outsource any non-core activities.

Outsourcing in the Private Sector

Outsourcing, or contracting, is currently used by many businesses to reduce costs and to change how they focus their priorities. While contracting of business functions is not new, the scope of the activities that are outsourced has broadened and the corresponding frequency of outsourcing has increased in recent years (Winkleman, 1993:52). This is because of the many companies reducing the size of their operations. They have found that there are advantages to not having all of their work accomplished by employees of the company. By outsourcing certain functions the company can concentrate on that which it does best, its core competencies. This in turn frees additional resources to further support development of the core competencies for competitive advantage.

Quinn and Hilmer present four ways in which companies leverage their company's resources by outsourcing. First, returns on internal resources are maximized as they are used to concentrate on what the firm does best. The outsourcing firm who is saving money can reinvest the capital in improving itself. Second, resource savings may be used to improve the core competencies. Then, these better funded and developed core competencies become barriers for competitors to overcome. When reinvestment capital is available and used correctly it will make the company less vulnerable in the market. Next, through outsourcing there is full utilization of the external suppliers investments, innovations, and specialized knowledge. For a specialized purchase the smaller supplier will likely be able to deliver it cheaper. On the other hand purchases from a large supplier take advantage of the economies of scale that the larger supplier has developed. Last, in rapidly changing markets, outsourcing gives a firm greater flexibility to enter or leave

these markets and be more responsive to customers without a large capital investment. (Quinn and Hilmer, 1994:43).

While commercial firms have found advantages in managing their resources through utilizing outsourcing, there are some areas of concern. One of the drawbacks for most firms considering outsourcing is the fear of loss of control over that portion of their organization (Bardi and Tracey, 1991:14). While in-house functions may be quick to respond to changes in operations, the contractor may not have resources available to accommodate them. The contractor will likely provide only what was written in the contract or charge additional fees for changes. Another drawback to outsourcing is the loss of skills critical to the organization. Once a particular function is outsourced there may be no internal knowledge of that function left in the organization. Without this knowledge, future planning is difficult and it is hard to recover in-house wisdom once the decision is made (Quinn and Hilmer, 1994:52). This may place more reliance on the contractor than the purchaser is comfortable with.

Core Competencies in the Department of Defense

While no specific statement of DoD core competencies is available, Admiral Eccles has presented fundamental military concepts which may serve as a foundation for the formulation of such competencies. These concepts are:

strategy - the determination of objectives and broad methods for their attainment, *logistics* - the creation of sustained support of weapons and combat forces, and *tactics* - the specific employment of weapons and forces toward the attainment of the objectives of strategy (Eccles, 1959:17-21).

Eccles argues that these fundamental concepts are interrelated and must be considered together. Commanders must understand the three broad concepts and employ them equally because concentrating on only one could reduce the effectiveness of the others. This is similar to the private sector core competencies which must be limited in number, understood throughout the organization, and not just concentrated in one business unit.

But, is logistics a core competency of the Department of Defense? At least one author argues that in recent operations the DoD's primary mission was logistics support, not combat. Military assistance after Hurricane Andrew and humanitarian aid to the people of Rwanda are two examples where logistics was not just a support function, but the objective result as well (Jones, 1995:20). Jones concludes that "So long as it is the nation's policy to perform these missions, some portions of the "infrastructure" need to be looked at as integral elements of force structure" (Jones, 1995:20). This echoes others who have recommended identifying core competencies and then slowly integrating outsourcing (Venkatesan, 1992, Quinn and Hilmer, 1994).

Outsourcing in the Department of Defense

Traditionally, the DoD has contracted for logistics services in many areas, such as passenger carriage (Grier, 1995). The changing military mission and reduction of funding has led to the call for increasing use of commercial business practices, including outsourcing (Pyles and Cohen, 1993, GAO, 1996). One definition of outsourcing used in the DoD is "the transfer of a function previously performed in-house to an outside provider" (DoD, 1996:1).

Similar to private sector goals, the DoD has identified four areas where it may create savings and improve readiness by outsourcing.

1. Competitive forces - The competition created by outsourcing will drive those competing for government contracts to increase efficiency, reduce costs, and focus on customer's needs. This will lead to faster delivery of better products to the DoD.
2. Flexibility - DoD managers will have more flexibility to respond to the type and size of resources needed by changing the levels of outsourcing "purchases".
3. Economies of scale and specialization - Large firms in a particular market have many customers. As a result, they may have developed economies of scale that an individual customer could not attain on its own. Outsourcing to these firms allows the DoD to take advantage of products or services that would be impossible to acquire or too costly to produce organically.
4. Better management focus - By concentrating on its core competencies and outsourcing functions that only support the core competencies the DoD will free resources to be used on the most important tasks. (DoD, 1996:5).

These perceived benefits of outsourcing support functions are similar to those that are expected in the private sector. Both the DoD and private sector companies are seeking cost reductions and improved customer service. However, any organization considering outsourcing must first understand their core competencies and make certain that outsourcing is for the right reasons (Jones, 1995:28).

In 1996, the Deputy Undersecretary of Defense for Acquisition and Technology released a report entitled, "Improving the Combat Edge Through Outsourcing." The goal

of this report was to hasten outsourcing of service and support activities. The report outlines three conditions an activity must meet to be considered for outsourcing:

“First, private sector firms must be able to perform the activity and meet our warfighting mission. DoD will not consider outsourcing any activities which constitute our core capabilities.

Second, a competitive commercial market must exist for the activity.

Market forces drive organizations to improve quality, increase efficiency, and reduce costs. DoD will gain from outsourcing and competition when there is an incentive for continuous service improvement.

Third, outsourcing the activity must result in best value for the government and therefore the U.S. taxpayer. Activities will be considered for outsourcing only when the private sector can improve performance or lower costs in the context of long term competition.” (DoD, 1996:4)

As these goals were presented there was no discussion of the “core capabilities” of the Department of Defense. In discussing logistics functions the primary emphasis is on outsourcing the work of the military repair depots. To realize the full benefits of outsourcing the DoD must first identify the core competencies and then look at all types of logistics services to identify what can be outsourced (Jones, 1995:28). However, once outsourced these functions are likely gone for good. In the event of a war or contingency there will not be time to train DoD members in a field that has since been outsourced. This is why the identification of core competencies in the military is so critical. The DoD should not quickly embrace outsourcing to meet any of the stated goals until it investigates the consequences of relying on others to provide these activities. The DoD should choose to retain those activities necessary to strike a useful balance (Jones, 1995:20). Those who are available to provide non-core services in logistics are known as third party logistics providers. Their industry is discussed next.

Third Party Logistics Development

Businesses in the United States have historically contracted with providers outside their own companies to help with specialized services. This contracting is sometimes referred to as "outsourcing" (Winkelman, 1993:52). In the logistics area there have traditionally been middlemen who provided services to benefit both shippers and carriers of freight. These services included brokerage, forwarding, freight consolidation and warehousing (Sheffi, 1990:27). Recently the scope of these services has increased to include shipment tracking, bill auditing and payment, and fleet operations (Sheffi, 1990:27). In the past ten years the term "third party logistics" has become the popular way to describe providers of this full range of logistics services. Maltz and Lieb offer this definition:

"A third party logistics provider is a company which supplies/coordinates logistics functions across multiple links in the logistics supply chain. The company thus acts as a 'third party' facilitator between seller/manufacturer (the 'first party') and buyer/user (the 'second party')." (Maltz and Lieb, 1995:45)

The growth of the number of third party logistics providers and the greater acceptance of their services resulted from recent changes in both the supply and demand side of logistics functions. On the supply side, many of the changes were driven by the deregulation of the transportation industry in the 1980s. The transportation carriers found new "freedom to develop and price transportation systems based on economic rather than legal principles" (Sheffi, 1990:28). The competition that was increased by this new freedom forced weaker carriers out of the market. Those remaining had to enhance their transportation services in order to differentiate themselves from other carriers (Maltz and Lieb, 1995:47). They found that they could do so by adding information about the routing

and delivery times to the transportation service. The growth of this movement was assisted by the advent of cheaper and more powerful computers. These systems allowed carriers to add services such as electronic freight tracking, routing , and billing (Sheffi, 1990:30). Some carrier companies created value-added service providers as a separate business entity, thus creating a third party to the shipper/carrier relationship (Maltz and Lieb, 1995:49).

During the same time that these changes were occurring in the transportation industry users of transportation services, the demand side, were changing as well. American companies were changing to compete in an increasingly global marketplace. Part of that change was to improve processes to speed up product cycles and delivery times. While implementing these processes, the companies were also looking to improve customer service and reduce personnel costs (Maltz, 1994:130). Many companies chose to concentrate on their core competencies and outsource logistics functions that they did not consider core to the company (Sheffi, 1990:29). While these events led to the growth of third party logistics there are other business reasons to adopt their use.

The Case for Use of Third Party Logistics

In a recent review of third party logistics research, Maltz found that the top three objectives that companies try to obtain from outsourcing logistics were cost reduction, improved service, and flexibility (Maltz, 1994:124).

1. Cost Reduction - Bardi and Tracey found similar results in transportation management research, citing labor cost saving as the primary reason for outsourcing, followed by asset reduction, and reduced transportation costs (Bardi and Tracey, 1991:15). Purchasers of contract logistics expect to reduce expenses

by purchasing only the amount of logistics needed rather than having expensive capital assets in-house that are not always fully utilized.

2. Improved Service - Purchasers of contract logistics expect to obtain improved service. This may take the form of better quality logistics, efficiency, or less administration (Winkelman, 1993:52). In any case the shipper is looking for logistics to add more value to the product. By providing service to a number of customers, third parties realize economies of scale in equipment and personnel that can allow them to reduce their rates and improve service (Bardi and Tracey, 1991:16).

3. Flexibility - Sheffi notes that flexibility in markets is the ability to enter or leave consumer markets quickly (Sheffi, 1990:29). This flexibility enables manufacturers to give individualized service to the customer, particularly in special or non-routine requests (Gardner, 1994:837). Third party logistics supports the purchaser by allowing them to enter or leave markets without movement of company-owned personnel or assets.

These advantages are the goals of those outsourcing their logistics functions.

However, there are some drawbacks to the process.

Arguments Against Outsourcing Logistics Functions

There are some logistics functions that a company may want to retain for strategic reasons (i.e., they consider it a core competency). The issues surrounding whether a function is a core competency have been discussed previously. Core competency decisions and how much control the company wants over its logistics system are two of the decisive factors in answering the outsourcing question. Others include aligning

priorities and keeping experienced personnel in-house. These key issues warrant a close look when a discussion of outsourcing arises.

Management can expect to lose some amount of control over the function if the decision is to outsource. Managers may be uncomfortable with the lack of centralized control that having a contractor produces. In one study, of transportation outsourcing, this was given as the primary reason for not outsourcing (Bardi and Tracey, 1991:20).

Closely related to the control issue is the view that the goals and priorities of the two firms may not always be the same, resulting in slowed processes. There will not be many cases where the goals of the two organizations are completely aligned. A cooperative atmosphere, different from the previous tense relationships between suppliers and buyers, is required. This calls for new management approaches in purchasing, contract management, and logistics information systems. These functions would maintain shared information systems to manage acquisitions together (Quinn and Hilmer, 1994:54).

Also firms may lose expertise in critical skills that should be retained in-house. Some companies have outsourced, taught their supplier about quality standards, and then watched as those suppliers struck out on their own (Quinn and Hilmer, 1994:52). Because of these issues it is absolutely essential that the firm have a strategic plan that indicates which core competencies they are cultivating and keep them within the organization (Prahalad and Hamel, 1990). A close look at these drawbacks to outsourcing must be made prior to initiating a contract.

Questions to Guide Implementation of a Third Party Relationship

Given the pros and cons of establishing a third party logistics relationship, some guidance is needed for those investigating starting such a relationship. To guide

companies who are investigating outsourcing of logistics LaLonde and Cooper, in their book Partnerships in Providing Customer Service: A Third Party Perspective, furnish the following four key questions for the firm to ask. By answering these key questions the purchaser of third party services should be able to start designing and implementing their third party relationship. The following questions and discussion are adapted from LaLonde and Cooper, 1989:

1. Why should the firm enter into a third party relationship?

The decision to concentrate on core competencies is one reason for entering into a third party relationship. Another is the overall shift, in the logistics channel, from a transaction-based relationship between the buyer and seller to a contract-based relationship. As a result, the blanket purchase of logistics services has become more common. This aids streamlining of the administration of the logistics system and creates common expectations of service levels if the relationship is long-term. The decision to concentrate on core competencies also drives the selection of logistics contracting.

2. Who should the firm select as a third party partner?

Strategic issues of the compatibility of the two parties and their commitment to a long-term relationship will guide selection. From an operational aspect, the ground rules regarding the area of operations and how the parties will interact are important to establish.

3. What are the risks in a third party relationship?

Both party's concerns are dependent on the type of contract agreed upon. The buyer may not want a lengthy contract that reduces flexibility in the market or

leads to charges for excess services. Other typical fears of the buyer are loss of control and reduction of in-house critical skills. From the provider's perspective, the firm is wary of large investments in a relationship that may not grow. The provider must invest in the new contract to perform the services and there are concerns about payback on investment.

4. How should the firm go about developing and maintaining a third party relationship?

A broad answer is that both parties must be open, communicate, and share ideas for the relationship to work. This requires a step-by-step approach to beginning this new partnership.

Chapter Summary

The use of contract logistics in American businesses is increasing. Part of the increased use of these logistics providers has grown out of the identification of core competencies. The identification and use of core competencies in outsourcing decisions, in the private sector and the DoD, opened this chapter. One particular type of outsourcing is third party logistics. This type of logistics has grown in the past decade and the reasons for this growing market were presented next. Last, the decision to outsource logistics is a difficult one. A series of questions that may help in the decision process concluded the chapter.

The next chapter presents the research design. A qualitative method was developed using multiple case study analysis. Its design and a discussion of the research propositions are included.

III. Methodology

Introduction

This chapter describes the research design selected for this study: a qualitative method using multiple case studies. Next, the research questions used in the study are presented. Following the research questions are the research propositions which were tested in this research. The results from investigating these propositions were used to answer the research questions. The formulation of the instruments used during the study is also discussed. The actual instruments may be found at Attachments A & B. The chapter concludes with a discussion of the implementation of the research design.

The purpose of this study was threefold. The first purpose was to report the results of the experiences that sample organizations have had with third party logistics. The second was to determine characteristics of successful contract logistics relationships by questioning both customers and providers. The final purpose was to propose areas for possible Air Force implementation and to recommend how the Air Force can take advantage of private business experience.

Research Design

When a study is undertaken, good research design presents a road map for the researcher to follow and outlines the strategies that will be used. Documentation of the research design allows others to replicate the methodology and compare results. The research design must be carefully chosen to match the subject and problem presented by the study.

There are two different approaches to research design. They are the quantitative and the qualitative approaches. The quantitative method is used when the researcher must

remain distant and independent of the subject (Creswell, 1994:8). The progress of a quantitative study is exact and results in hypotheses which are tested by cause-and-effect. The product is a formal report that explains the results, measured numerically, and uses statistical proof. (Creswell, 1994:2).

The qualitative method, on the other hand, is distinguished by the researcher's interaction with the subjects while gathering data. Categories derived from the study are not precisely identified beforehand but emerge as the study goes on (Creswell, 1994:7). Information may be verified by observing the patterns in different categories. This study was characterized by the interactive nature between the researcher and representatives of the firms questioned. The interviews completed by the researcher took place over the telephone or in person, as opposed to sending a survey by mail. Follow-up questions could take place immediately to clarify points in the research. As possible patterns in the data developed, the interview feedback could be modified to aid the search for patterns in the data.

The qualitative method is also often used to investigate a new topic whose characteristics are still unknown. This is known as exploratory research and is used because no "theory" has been developed about the topic (Creswell, 1994:9). The subject of this study is relatively new, with most growth occurring since the early 1980s (Maltz and Lieb, 1995:46). Therefore, a limited amount of research was available for use as a basis for the study. As a result of the face-to-face data gathering required and the exploratory nature of the study, the qualitative method was chosen as the appropriate method.

There are four types of qualitative research designs which Creswell defined as follows:

1. Case Study - A single entity that is explained by collecting detailed information.
2. Ethnography - The study of a cultural group in their natural setting.
3. Grounded Theory - When a researcher derives a theory through multiple stages of data collection.
4. Phenomenological Study - The examination of human experiences through detailed description of the people being studied (Creswell, 1994:11-12).

Ethnographies and phenomenological studies are primarily used in studying human relationships and thus are inappropriate for this study. Grounded theory is distinguished by constant comparison of data over time periods. The scope and purpose of this study preclude such a lengthy comparison.

The appropriate research design for this study is the case study, actually the use of multiple case studies. There are many organizations now utilizing third party logistics providers. Because they have different organizational structures and operate in varied industries their experiences with third party logistics may or may not be different. One goal of this research was to find if similarities existed.

Yin notes that multiple case studies are undertaken to *replicate* a previous case (Yin, 1994:45). That is, the data observed are similar across several cases and used to draw conclusions. This approach is taken to ensure that the observed phenomenon is not a rare case. The use of multiple case studies is different from "sampling logic," in quantitative studies, where the results of a number of a samples are assumed to be predictive of the entire relevant population (Yin, 1994:47). In this study numerous

organizations were investigated using the same research protocol. Using this method aided identifying patterns in the data.

The researcher must be thorough when building a theoretical framework for these case studies. This framework must state where the particular phenomenon is expected to be found and, conversely, where it is not expected. Once a study of a particular case is completed, these results are used to generalize to the next case. In this way the multiple cases are tied together and provide more convincing evidence of the results.

The research used a three-part design to perform an analysis of the current use of third party logistics. The parts were: validation and selection, data collection, and data analysis.

Validation and Selection. In a qualitative study the researcher is considered the primary instrument for data analysis (Creswell, 1994:45). However, a protocol, or form, is required to organize data gathering. The protocol for this study is a structured set of questions designed to aid in answering the research questions and evaluating the propositions. The protocol was constructed after a thorough review of current literature on the subjects of third party logistics, strategic outsourcing, and core competencies. To ensure validity, the protocol was reviewed by members of the Air Force Institute of Technology (AFIT) faculty. This step was taken to ensure that the protocol meets the criteria of contributing useful information regarding the research questions.

The selection of firms to include in the case studies was by purposive sampling. In purposive sampling the researcher chooses which cases to include (as opposed to a random sample). Cases were chosen that contribute to evaluation of the propositions. The progression of choosing subjects for a multiple case study is an iterative process. The

results of one case study may lead to the selection of the next case study as best to compare and contrast results (Miles and Huberman, 1984:37).

Initial selection of the firms for the study came from personal contacts of the researcher or members of the AFIT faculty. A planned minimum of one private sector firm involved in outsourcing, one federal government organization involved in outsourcing, and one logistics provider was used to begin the process. The researcher sought out interviewees who were in charge of organization logistics, contract monitors, or financial officers responsible for administration of the logistics contract in the outsourcing organization. For the provider, the point of contact was familiar with the firm's capabilities and past performance, for instance, leaders in the marketing department or client services.

Data Collection. Once initial selection of subjects was complete the collection of data began. Initial contact with the person to be interviewed was by telephone. If there was an agreement to submit to a full interview, a copy of the entire protocol was sent ahead to allow for preparation. At a mutually agreed upon time, the full interview was conducted by telephone. Interviews at several local firms were accomplished on-site. This method was preferable both to gather more in-depth information during the interview and to observe the operation first-hand. The researcher completed the protocol during the interview. The facts gathered were used in the next step in the process, data analysis.

Data Analysis. The data was analyzed to evaluate the theoretical propositions. Yin offers four dominant modes of data analysis for case studies: pattern-matching, explanation-building, time-series analysis, and program logic models. The following are adapted from Yin, 1994.

Pattern-Matching - Compares an empirically based pattern with a predicted one. Replication across multiple cases gives strong evidence to support the predicted outcome.

Explanation-Building - An iterative process where the theoretical positions are constantly revised to show causal links.

Time-Series Analysis - Intricate and precise experimentation completed over time to lay a foundation for conclusions in the study.

Program Logic Models - A combination of pattern-matching and time-series. This analysis notes a complex chain of events (pattern) over time (time-series). This is used to identify multiple causes linked together over a period of time.

Explanation-Building requires constant revisions of the propositions until a final explanation of the results is obtained. This mode of analysis was not used because the objective was to determine the validity of the propositions, not to fully explain why each organization acted as they did. Both Time-Series Analysis and Program Logic Models require a longer timeline than the scope and purpose of this study permit (Yin, 1994:106-119).

The appropriate mode of analysis for this study was pattern-matching. The propositions were presented as the predicted pattern. The protocol was administered to gather data to see if the propositions held in practice. An initial pattern was constructed during the first case study. The subsequent studies were undertaken to discover if the patterns found in the first case were repeated. Duplication added to the weight of the evidence regarding the acceptance or rejection of a given proposition.

The use of the survey protocol resulted in large amounts of qualitative (written) data. To analyze this data the results of the interviews were “coded” to reveal patterns.

Miles and Huberman offer this definition:

A code is an abbreviation or symbol applied to a segment of words-most often a sentence or paragraph of transcribed field notes-in order to *classify* the words. Codes are *categories*. They usually derive from research questions, hypotheses, key concepts, or important themes. They are *retrieval* and *organizing devices* that allow the analyst to spot quickly, pull out, then cluster all the segments relating to the particular question, hypothesis, concept, or theme. (Miles and Huberman, 1984:40)

To determine codes (research variables), the focus of the research returns to the propositions. Their use assists in choosing categories for coding. The results of the coding are patterns which were used to draw conclusions in relation to the stated propositions. Before the research propositions were identified, research questions were proposed. These questions are presented next.

Research Questions

Once the general purpose of the qualitative study was identified, the focus turned to identifying research questions. These questions became topics that were explored in the data gathering stage. After a thorough literature review, these questions were used to identify propositions regarding results the researcher may find. The following research questions were used in this study.

1. What logistics services have been outsourced successfully?
2. Why were the logistics services outsourced?
3. What internal processes were used that led to the conclusion of hiring a logistics provider?

4. How is the performance of the logistics provider evaluated?
5. What services are third party logistics companies providing to the federal government?
6. How is the relationship between government organizations and the third party provider different from that between a third party provider and a private sector customer?

Research Propositions

After the research questions point the researcher to what is to be answered, the emphasis turns to research propositions. These propositions identify theoretical issues and provide a direction to the search for evidence (Yin, 1994:21). After a thorough literature review, six propositions were identified to reflect the research questions proposed above. The propositions are stated in the null case first; the predicted outcome of the research follows. Last, the rationale and supporting evidence for the predicted outcomes are provided.

Proposition 1:	The services contracted to third party logistics providers vary from organization to organization.
Predicted:	The organizations who utilize third party providers contract for comparable services.
Rationale:	

Surveys of companies outsourcing logistics functions indicate that some functions have a greater tendency to be outsourced than others. These include over 50 percent of freight bill auditing, payment and reports in transportation (Bardi and Tracey, 1991:18). The authors go on to point out that these functions can be outsourced as a package because they use the same data base and have similar processing requirements. In contrast less than 10 percent of firms in the survey outsourced carrier selection, contracting, or negotiating. The study showed that outsourced activities could be grouped into functions

that were supportive rather than core to the company (Bardi and Tracey, 1991:18).

Similar results are expected in this research. There is a limit to the third party logistics services available for purchase; therefore, it is likely the companies will purchase some of the same services.

Proposition 2: The reasons for hiring third party logistics services vary from organization to organization.

Predicted: The organizations who utilize third party providers do so for similar reasons.

Rationale:

In a study of empirical surveys about third party logistics Maltz found that within a particular logistics area, e.g. transportation or warehousing, the reasons for outsourcing the function in question were similar (Maltz, 1994:132). In this particular survey, service and costs were rated as most important in outsourcing transportation. In warehousing the emphasis was on location as well as costs when outsourcing was considered. These results were comparable across several surveys leading to the conclusion that many companies have like requirements during third party selection. The goals of companies in the same industry will be similar. When they hire contractors to provide services they will do so for like reasons.

Proposition 3: The organizations considering outsourcing logistics functions each have a similar process for determining if a provider is required.

Predicted: The organizations choosing whether to utilize third party providers will decide differently.

Rationale:

In their 1994 study, Lieb and Randall found that the initiative to use third party services originated at different levels in the corporations surveyed. The origination of the

idea came from corporate level all the way down to the local level. In addition, there were differences in the functional area managers consulted when making the decision. Those managers consulted varied throughout all parts of the organization (Lieb and Randall, 1994:4). While companies may have similar goals, the structure and corporate personality of the companies will be different. The amount of empowerment given at each level of the organization will drive who has input and who ultimately makes the outsourcing decision.

Proposition 4: The organizations seeking a third party logistics provider will use similar criteria and reasoning when making the selection.

Predicted: The organizations considering outsourcing logistics functions each have different criteria and reasoning for selecting a provider.

Rationale:

The reasoning provided by Lieb and Randall above applies to the selection process as well. Again, the decision making process in individual organizations will affect any result. In this case the choice of provider will be accomplished in various ways in the different organizations.

Proposition 5: The organizations currently outsourcing logistics functions have different evaluation criteria for determining the success of their provider.

Predicted Organizations purchasing logistics services calculate the success of the relationship similarly.

Rationale:

Because of the comparable motivations for hiring third party companies it is reasonable to assume that companies will measure successful outsourcing in the same way. Lieb, et al. found that half of U.S. company executives cited cost as the reason for selection and the other half chose service as the most important factor (Lieb, et al.

1990:40-41). When the time comes to evaluate the effectiveness of these services these firms will act in a like manner.

Proposition 6: The services provided to government organizations by third party logistics companies are different than those provided to the private sector.

Predicted: Government organizations will purchase the same services that private sector organizations purchase.

Rationale:

Because government organizations are in the same downsizing mode as businesses the government organizations should be seeking the same results. For business these goals are primarily lower costs and better service in the private sector (Maltz, 1994:132, Bardi and Tracey, 1991:19). In the Department of Defense the Rand Corporation has identified similar logistics improvement strategies that call for "high performance." This is defined to include both "effectiveness and efficiency." "Effectiveness" equates to "fast and reliable" (better service) and better "efficiency" translates to "likely to be affordable" (lower cost) (Girardini, 1995:1-2). It is expected that government organizations will look to reduce costs and improve service as the private sector has.

These propositions are the findings expected when completing the case studies. After gathering case study data the coding began. The codes used in this research are the research variables. These variables are presented next.

Research Variables

The research variables were represented by codes that were used to categorize the data for analysis. These variables were developed after the propositions and formed categories derived from the expected responses to the protocol.

Table 3-1, Research Variables

Proposition	Variable	Definition
1	Core Activities	Activities that the organization considers as vital and setting them apart from competitors in their market. Core activities will not be considered for outsourcing.
1	Non-Core Activities	Activities that may be considered for outsourcing because there is not a vital company need to keep the activity in-house.
1	Logistics Function	A part of the distribution chain that may be considered for outsourcing (e.g., transportation, warehousing).
2	Downsizing	Reduction in company manpower or material to achieve more efficient operations.
2	Cost	The overall costs of the logistics function considered for outsourcing.
2	Service	The level of customer benefits the organization desires to provide.
2	Capability	Additional functions or expansion of current functions that a company hiring a third party provider is seeking, such as increased capacity or flexibility in the marketplace.
3	Level of Management Involvement	In a given outsourcing selection process, the functional area where the ideas for outsourcing came from and level of approval for outsourcing.
3	Outsourcing Goals	The desired outcome of outsourcing.
3	Communication With Provider	Information that is passed between customer and provider during the negotiation process.
3	Timetable	Time frame for contact and feedback throughout the third party selection process.
4	Selection Criteria	The characteristics that ultimately lead to the choice of logistics provider.
4	Compatibility	The ability of the two organizations involved, and their supporting systems, to work together.
4	Timetable	Step-by step procedures for outsourcing implementation, use and feedback.
5	Performance Criteria	Goals of the third party relationship that are used to evaluate its success.
5	Successful	Third party relationship which has met the goals set by the organizations involved.
5	Evaluation Report	Feedback on the success of the outsourcing.
6	Government Agency	Public sector organization involved in outsourcing.

Instruments

The instrument used to gather data for this study was a research protocol. This was a series of questions that were posed to the representative of each organization studied. The research protocol was necessary for a number of reasons. First, it gave the researcher a guide to clarify what to ask at each point in the interview. This direction ensured that the same information was collected for each case study. It also kept the interview on track so that unneeded information is not gathered that would confuse data analysis. Second, an interview protocol instrument was sent to the interviewee ahead of time to allow preparation for the actual interview. This person may have prepared answers in advance or gathered documentation to aid the research. This is particularly important in this study as the limitation of time made lengthy interviews or follow-up difficult. Last, a credible instrument provides quality documentation of the research. This adds to the weight of the findings and leaves a trail for others to follow. The instruments used in this research are at Attachments A and B.

Implementation of the Research Design

The choice of objectives, research questions, and propositions above provide an overall direction for the study. At Attachment D is a figure showing the relationships between the research questions, research propositions, and the research variables. A framework is needed to place the study in motion toward data gathering and analysis. The following steps were required to implement the research design:

1. A thorough review of current literature concerning third party logistics, outsourcing, and core competencies was completed. The results of this review were included in Chapter Two of this thesis.

2. After completion of the literature review the survey instrument was developed. Its content was validated by logistics faculty members at AFIT. When the instrument was complete it was tested by administering at a local company to provide practice for the researcher and to ensure validity.
3. Firms to be interviewed were contacted to determine if they are willing to be part of the study.
4. Following initial contact a copy of the instrument was forwarded to allow for preparation. The full interview normally took place over the phone. Follow-up took place as required to receive complete information.
5. Organizations were added to the study as required to complete coverage of the research questions.
6. Data was coded using the research variables.
7. After data was gathered, responses were analyzed to find broad topics. When the broad topics were identified, the researcher returned back to the complete set of data to identify where these topics were found. The codes of the topics were written next to them. This mapping process yielded a preliminary organization scheme to see if patterns emerge (Creswell, 1994:155). If new codes were needed they were added and all the data reanalyzed to see if any items identified needed the new code.
8. As patterns developed they were compared to the propositions to evaluate the correctness of the propositions.

Chapter Summary

This chapter described the type of research design selected, a qualitative method using multiple case studies. This method was chosen because this is a relatively new topic

and interaction was required between the researcher and the subject. A three part research design was discussed next. The three parts of research design were: validation and selection by purposive sampling, data collection using a research protocol developed by the researcher, and data analysis comparing interview results using pattern matching. Following research design, research questions were presented and then propositions were drawn as to what the expected outcome of the research would be. To complete the chapter a breakdown of the steps used to implement the research design was supplied. Representatives of 18 organizations were interviewed to gather information for this study. The next chapter presents an analysis of the data gathered in these interviews. The data was analyzed to determine acceptance or rejection of the research propositions.

IV. Results and Analysis

Introduction

This chapter presents the results of data gathered for this thesis and offers an analysis of the information. The chapter implements the data collection and data analysis portions of the three part research design, introduced in Chapter Three. First, research propositions, stated in the null case, are identified. Next, the predicted outcome of the research is shown for each proposition and the acceptance or rejection of the research proposition is indicated. A discussion of the reasoning for each decision follows. Last, the applicability of the research variables for each proposition are presented.

Proposition 1

Proposition 1: The services contracted to third party logistics providers vary from organization to organization.

Predicted: The organizations who utilize third party providers contract for comparable services.

Variables: Core activities, non-core activities, logistics functions

Results: The proposition is rejected.

Analysis of Proposition 1. While the outsourcing decisions of any two users will not be identical there were definite trends in the logistics functions that companies outsource. These trends can be classified into two tiers: major functions outsourced and additional services. Both users and providers of third party logistics indicated that the major functions outsourced were transportation, warehousing, and inventory/supply chain management. All of the third party users contacted for the study were using transportation and warehousing to some extent. Most users viewed warehousing and

transportation contracting as a continuation of the classic relationships that they have always had with logistics contractors. Outsourcing is commonplace in these companies although the term outsourcing may not have been used.

The commitment to third party transportation was strong and this function was outsourced by all firms interviewed. Very few users felt that they could do as well as businesses specializing in transportation. All transportation purchasers had been using third party carriers for several years and expected to continue. There were two users of transportation who still decided whether to use their own, in-house, assets based on the merits of each choice. The users looked at the cost and service of internal and external carriers in a particular geographic area. These users were willing bring the function back in-house if the carrier did not provide superior service.

The degree of use of third party warehousing varied. One company retained in-house operations and the others outsourced warehousing to some extent. Overall, inventory reduction was an important driver of decisions. The long range goals of all those interviewed were to reduce or even eliminate warehouses altogether.

The use of a provider for supply chain management varied as well. Users responded that all, some, or none of these activities were outsourced. Third parties who managed inventory or provided recommendations for supply chain management did so with relatively new services brought about by information technology. They were marketing themselves toward certain industries whose products, providers believed, would benefit from their supply chain management expertise. Providers preferred to find customers whose products matched the characteristics of the systems that the provider already had available. The characteristics of products that providers believed would

benefit most from their expertise were products with high volume, that were relatively expensive, or had a short product life cycle. The automotive and heavy equipment parts, pharmaceuticals, high technology, and computer industries were all identified as meeting these characteristics.

The second tier of services that were required by users of third party logistics varied by what each firm needed to compete in its industry. These services are often called value-added services in the literature (LaLonde and Cooper, 1989:30). The value-added services of firms interviewed for this study included:

- assembly - final buildup of items for delivery
- merging - taking several parts of an order from different locations and delivering them to the customer at the same time (sometimes referred to as "kitting" or "bundling")
- reverse logistics - one example is rapid computer repair as the broken asset is picked up, repaired (in a third party owned, contracted or separate facility), and returned within a given timeframe

Many companies are taking advantage of these services as they cannot afford to perform these services in-house. Some users are not big enough to perform all of these services. However, when many users purchase value-added services from providers they can benefit from the economies of scale that providers have in these secondary services. The same types of economies of scale that contractors have realized in warehousing and transportation for many years are now being applied to these value-added services. However, some providers noted that they would only consider larger clients because of startup costs.

Analysis of Proposition 1 Variables.

Core Activities and Non-Core Activities - These variables were not usually mentioned by users in the discussion of the types of activities outsourced. However, the comments concerning reducing the investment in areas in which they were not expert implied their reduction in non-core activities and concentration on those that are core. When outsourcing a particular function users most often mentioned the value of finding additional expertise. They were looking for someone with more knowledge, experience, and assets to aid in solving their distribution problems. The users believed that there were firms available that had these attributes and could provide cheaper and/or better service.

Logistics Functions - The logistics functions most mentioned as currently outsourced were transportation, warehousing, and inventory/supply chain management.

Proposition 2

Proposition 2: The reasons for hiring third party logistics services vary from organization to organization.

Predicted: The organizations who utilize third party providers do so for similar reasons.

Variables: Downsizing, Cost, Service, Capability

Results: The proposition is rejected.

Analysis of Proposition 2. Two major reasons for hiring third party providers were consistently mentioned; cost and service.

The emphasis on cost reduction took many forms. Some users were looking strictly at the cost of delivery of the service. This led to a “make versus buy” decision for the company. Decision points, for example a 10 percent cost reduction, were established

as a requirement to pay for the costs that would be incurred when switching to outsourcing. Some companies looked beyond the costs that were reduced by using third party transportation and warehousing. Other factors included the simplicity of consolidating services to pay only one bill, reduced manpower to oversee logistics, cheaper freight rates brought about by the providers' larger purchasing power, and access to costly inventory management and shipment tracking systems that the user could not afford.

While costs are a strong consideration, three of the companies studied admitted to being frustrated in the measurement of logistics costs. They indicated that logistics costs were long ignored and are only now beginning to be understood. These firms were taking steps to improve their understanding of "unseen" costs of logistics, such as inventory carrying costs. They were gaining knowledge by consulting with professional organizations and implementing new procedures such as activity-based costing.

On the service side, companies were seeking the same, or better, logistics service at a reduced cost. These service improvements were measured in traditional ways such as on-time deliveries, accuracy of orders, and frequency and cost of loss and damage. While some users were gathering this data in-house, the information was increasingly read through shared data systems provided by the third party firm. Six of the ten providers indicated that users were getting data about daily and monthly service from the provider. This information is obtained by the user in different ways. The three ways mentioned by the providers in this study were through on-line queries, calls to customer service, and summary reports sent at an agreed upon interval.

While the drive to reduce costs and improve service is powerful, the firms interviewed were taking a step-by-step approach to increased use of third parties. For those that did not have a function totally outsourced, most indicated that the in-house logistics versus third party decision was done on a case-by-case basis. Functions had not been outsourced for the sake of outsourcing. Instead, the contractor was brought in only when it made economic and service sense.

In regard to long-range planning all users indicated that they would continue to use or intended to use third party logistics in the long term. Those that had traditionally contracted with third party carriers and warehouseurs were planning to continue. The companies who use third parties on a case-by-case basis planned to continue this approach. The only users being forced, from the top down, to outsource were the government users of third party logistics.

Analysis of Proposition 2 Variables.

Downsizing - There were no users interviewed who used outsourcing as a downsizing tool. Downsizing was more of a result than a cause. If there was a drive to decrease costs but retain the same level of customer service then some reductions were needed. Cost savings came from reduction of physical assets or personnel. The decrease in costs was often accomplished through the use of third party providers.

Cost - Cost was one of the two factors users mentioned most frequently when considering third party logistics. In the personnel area, three companies spoke of reducing their overall costs through reduction of personnel as previously mentioned. Two were specifically interested in outsourcing because of problems with union employees. The difficulties mentioned in these cases were increasing wage rates and human-resource

problems. One of the easiest ways of eliminating the problems was by outsourcing that function.

In the area of physical assets, several interviewees used third party providers to reduce the company's investment in "bricks and mortar." Reduction of the costs associated with the construction and upkeep of company-owned real estate was identified as a trend by both users and providers. One user and two providers specifically mentioned the conversion of costs from fixed to variable as becoming important drivers in the trend toward additional use of third parties. The ability to have reduced fixed costs allows the company to use its capital for current projects. The funds are not tied to a fixed asset which may not be useful if market changes.

Service - The other factor of major importance was service. In some cases service was more important than cost to the user. The users who placed more emphasis on service than cost were looking toward giving *their* customers what they expected. Users expected this customer service to gain them a return on their investment in the long run. Better service for users took many forms including speed, information or value-added services.

Capability - Users hired third parties often to provide capabilities that they did not have themselves. These capabilities were often types of information services. Inventory management technology, electronic data interchange of order information, and in-transit visibility of the product were the services purchased most often. The reason often given for the purchase, rather than in-house ownership, was the increasing cost and expertise needed to field these systems.

Table 4-1, User Reasons for Logistics Outsourcing vs. Providers Perception of Users' Reasons for Outsourcing

Reason for Outsourcing	Number of Times Identified by Users	Number of Times Identified by Providers
Reduced cost	6	7
Improved service	5	5
Concentrate on core competencies	1	4
Warehouse consolidation	1	1
Exit difficult labor situation	2	0
Less fixed facilities	3	0
Access to providers' capital assets	1	0
Convert fixed to variable costs	1	2
Hire a supply chain expert	0	5
Increase international presence	0	3

Proposition 3

Proposition 3: The organizations considering outsourcing logistics functions each have a similar process for determining if a provider is required.

Predicted: The organizations choosing whether to utilize third party providers will decide differently.

Variables: Level of management involvement, Outsourcing goals, Communications, Timetable

Results: The proposition is rejected.

Analysis of Proposition 3. No clear trends were shown with regard to the process of determining whether a provider was required. The proposal to outsource may have come from a lower level of management, middle level, or it was driven from the top down. Some firms formed teams to explore the possibilities. These teams normally consisted of experts from several functional areas to evaluate outsourcing. However, one firm mentioned that lower level employees are not normally included in these teams as their

breadth of experience did not encompass the full range of logistics activities. In other users the responsibility was solely that of the logistics department or equivalent. Some users opted to hire a consultant to search for an appropriate provider.

All of these users seemed satisfied that the method chosen to investigate third party possibilities was right for them. Corporate culture was a major consideration in the type of selection process used. The process used to solve this problem was similar to the decision making procedure for other company problems.

The providers had a different view of how and why the users approached them for information. They indicated that many companies came to them with requests for information or requests for proposals yet subsequently awarded no contract to *any* provider. They noted the percentage of such non-awards as typically 50 percent. Providers could only speculate at the reasons for these actions. Some of the assumptions were that after gathering information the companies thought they could still do it better internally, or that internal costs had been justified. Four providers mentioned these types of frustrations.

Another area that frustrated providers of third party services was the use of logistics consultants. These consultants will evaluate and recommend a third party provider for their customers. Providers noted that they would rather not add a "fourth party" to the process, but would like to talk to their customers directly. They also complained of the consultants' lack of experience. Providers judged this by the quality and type of questions that the consultants asked. They believed that consultants produced "standard" solutions not unique to each customer.

Analysis of Proposition 3 Variables.

Level of management involvement - The level of management involvement was different for many users. All users agreed that the larger the capital expenditures required, the higher the level of management involved. For example, if a fixed asset such as a new warehouse was being considered then the decision rose above the director of transportation, or equivalent, level.

Outsourcing goals - The outsourcing goals of users were primarily improvements in cost and service.

Communications - No significant data was gathered in this area. At this point mostly internal communications were developed among the parties already mentioned.

Timetable - No particular timetable was indicated by any organization. An outsourcing decision was seen as a long-term decision. Decision makers were given as much time as needed to arrive at the correct choice. No exact time frame was mentioned.

Proposition 4

Proposition 4: The organizations seeking a third party logistics provider will use similar criteria and reasoning when making the selection.

Predicted: The organizations considering outsourcing logistics functions each have a different criteria and reasoning for selecting a provider.

Variables: Timing of implementation, selection criteria, compatibility

Results: The proposition is accepted.

Analysis of Proposition 4. While the actual person or group making the third party decision may vary, as mentioned in proposition 3, the criteria and reasoning used were consistent throughout the using firms studied. The key selection criteria were cost,

performance or capabilities, and cultural fit between user and provider. The cultural fit was regarded as important in terms of how compatible the two organizations were. Users thought it was important to have a partner who was as interested in the delivery of their product as they were. The providers were looking for a long-term fit because of the startup costs, associated with a new customer, that would only be recovered in the long run.

The area of cost was fairly straightforward with users wanting to reduce the amount spent on logistics functions. To cover the cost of transition to a third party provider some companies mentioned that there should be a certain percentage of savings anticipated before actually converting to the third party. Regarding the two areas most often purchased all users found it easier to replace a third party transportation provider than a third party warehouser. Users appeared to view carriers as interchangeable. A substitute could be found easily and the switch made quickly. Warehouses, on the other hand, are in specific locations to serve specific customers. After moving a large volume of product into a warehouse the users are more likely to be patient in maintaining a relationship with a warehouser as the cost of removing the product and finding a new warehouse could be expensive.

Performance criteria involved solutions to service problems, or improvements in service areas, identified before the consideration of outsourcing. As in proposition 2 the methods of measurement were those that are traditionally used in transportation and warehousing: on-time deliveries, accuracy of orders, and reduction of loss and damage. Some mentioned that this amounts to just measuring what they are able to measure; simple data that is easy to collect. Other costs that were not as obvious require more cost tracing

systems than some users were willing to implement. A few were willing to go to the additional steps required to gather these costs.

The cultural fit of the two organizations was deemed very important for both users and providers of third party logistics. On the user side the companies were looking for a firm that would listen to their needs and try to solve their problems. From the initial contact through the selection process they were choosing their providers based on interpersonal contact as well as the ability to deliver high service at the best cost.

Providers were also looking for users which they could work well with. For the provider, starting a relationship with a new customer generates a great deal of up-front costs in equipment and the systems to support them. As a result, providers looked for customers with which they could build long-term relationships to get the return on investment required. Another reason that providers wanted to develop longer relationships was the sale of additional services. Both users and providers agreed that increases in business were more likely to be given to those providers with whom the users were already familiar.

Analysis of Proposition 4 Variables.

Timing of implementation - The only implementation issue mentioned was the difficulty of changing warehouse providers as opposed to transportation providers.

Selection criteria - When asked about making the selection of a third party provider a common scenario developed from answers of users and providers. Initial identification of potential providers was often by word of mouth. Because of this, providers was extremely interested in the reputation that they have in the industry. A

major emphasis was placed on customer service for this reason. Other ways that providers were identified to users were through trade publications, advertising, and conferences.

Once the users found several potential candidates they normally sent the providers a request for information (RFI). The answer to the RFI was information about the company and the services that it could provide to solve the problem. The field was then reduced to five or fewer candidates. These firms were sent a request for proposal (RFP) to answer the specific problem with specific solutions. Site visits between the user and providers normally took place during this phase. After site visits and review of the RFPs the remaining competitors are asked to provide a request for quote. The contract was then awarded.

Compatibility - Most users and providers of logistics services indicated that the ability to work together to solve problems was critical to the success of the relationship. Because of this desire compatibility was a very important factor in final selection of a provider. For their part, the some providers said they would refuse business if the fit of the organizations was not right. This occurred when the capabilities of the provider did not fit the user's needs, and the provider was not willing to invest to win the business.

Table 4-2, Users' Key Criteria for Selecting a Provider

Selection Criteria	Number of Times Identified
Cost	7
Performance/capabilities	7
Cultural fit	4
References	1

Table 4-3, Providers' Evaluation of Customer Potential

Reason for Outsourcing	Number of Times Identified
Cultural fit	7
Long term potential	3
Large player in industry	1
Product type matches/fits provider	2

Proposition 5

Proposition 5: The organizations currently outsourcing logistics functions have different evaluation criteria for determining the success of their provider.

Predicted: Organizations purchasing logistics services calculate the success of the relationship similarly.

Variables: Performance criteria, Reporting, Successful

Results: The proposition is rejected.

Analysis of Proposition 5. The outcome of any third party relationship came down to the same two reasons that companies hire providers: cost and service. In calculating the success of the relationship, service was mentioned more often than cost. Users were willing to pay more to the provider for premium logistics service of their products. The additional cost of this service would be made up in the additional customers the user won because of this quality service. The providers that were leaders in their sector of the industry admitted that their logistics services frequently cost more but believed that the service provided was worth the extra cost to their customers.

When measuring logistics service success, some users took advantage of the information capabilities of the provider. Many were purchasing supply chain management services which involved making the most efficient transfer of the product from

manufacturer to the customer. Supply chain managers in this study attempted to keep the time that goods remained in the inventory/transportation pipeline as short as possible.

Tracking and measuring these movements required the improved automated information management capabilities of the provider. When information was required by the user, they had access to the providers' tracking systems either on-site or through the provider's customer service department. This is what the users needed to answer the questions of their customers who were waiting for the goods.

Providers went to greater lengths to measure service success beyond traditional order delivery and loss or damage reports. They used techniques such as bringing in customers, as a group, to gain ideas for improvements and they also surveyed their customers. Some providers went as far as to survey the end customers of the user to determine if the delivery and pickup services were working well. Those that went the farthest did so by hiring an independent organization to survey these customers. This was perceived as eliminating any in-house bias.

In measuring costs, the users of third party logistics admitted that logistics costs were often hard to determine and that much emphasis was being placed on getting better in this area. The contract arrangements were evenly split between those that used a strict transactional type of contract and those that chose gainsharing, in which both parties split the amount of money saved by the providers' efforts. In a few of the arrangements both parties openly shared their cost information. This was done as part of the contract negotiation and aided in establishing contract terms beneficial to both parties.

Analysis of Proposition 5 Variables.

Performance criteria - All users were concerned with service and cost. Any discussion of other factors fell into one of these two categories.

Reporting - Daily, weekly, monthly, and/or annual reports were used by all users and providers to measure the success of the relationship. The systems used to gather the information were divided evenly between those that were in-house systems of the user and provider-installed systems.

Successful - For third party users the estimation of successful relationships was drawn from the service and cost measures. Other than cost and service, the primary benefits and drawbacks of these relationships varied from organization to organization. These factors and how often the eight users studied indicated their contributions to the success of the relationship are outlined below.

Table 4-4, Third Party Logistics User Success Measurement

Measurement	Number of Times Identified
Service	5
Cost	3
Internal Scorecard	3
Compare to trade association numbers	1
Use provider software	2

Table 4-5, Third Party Logistics User Perceived Benefits

Factor	Number of Times Identified
Less employee problems/issues	3
Costs more obvious	2
Provider Expertise	2
Information Systems	None
Added flexibility	1

Table 4-6, Third Party Logistics User Perceived Drawbacks

Factor	Number of Times Identified
Loss of control of process	3
Competition using same provider	1
Lower performance/don't "own" employees	5

Proposition 6

Proposition 6: The services provided to government organizations by third party logistics companies are different than those provided to the private sector.

Predicted: Government organizations will purchase the same services that private sector organizations purchase.

Variable: Government agency

Results: The proposition is rejected.

Analysis of Proposition 6. Government customers have always used commercial carriers for various transportation operations. Overnight and scheduled cargo airlift use is also common. Expansion of services is slowly taking place and studies are underway to develop more capabilities. Government customers are purchasing third party warehousing, inventory and overnight package delivery and warehousing. They are doing so for rapid delivery of high-value items just as private sector companies are. Only two government users were studied, making trend discovery difficult. However, both were looking to expand their emphasis on third party use and this impetus was definitely driven from the top layers of management.

Analysis of Proposition 6 Variable.

Government agency - Only one of the ten providers studied currently have contracts with the Department of Defense. This provider was satisfied with how the

contract was progressing. However, five of the providers strongly indicated that they would not attempt to win government business. They would avoid government contracts due to the amount of up front costs, inflexibility of contracts, additional accounting requirements, and payment schedules which made government contracts unattractive from a business perspective.

Proposition 7

Proposition 7: The relationships between government organizations and third party logistics providers is the same as that between private sector firms and providers.

Predicted: A different relationship will develop between government purchasers of logistics services, and their providers, that the relationships found in the private sector.

Variables: None

Results: The proposition is rejected.

Analysis of Proposition 7.

There was a single provider interviewed who currently provides services to government organizations as well as those in the private sector. The relationship was different on several points. The provider had to adapt parts of their cargo tracking system to that of the military (MILSTRIP). This took some amount of time and investment on the part of the provider. Another difference noted was the contract negotiating process. While the steps were essentially the same, the provider found it "intimidating" because the customer was producing the contract. In the private sector the provider makes up the contract and the user either accepts, rejects, or changes it. Last, the level of detail required in the financial area was different for the provider. Overall, the provider did not consider that these differences would keep them from considering other government

contracts. In fact, the interviewee liked these contracts because there was such an improvement that could be made in government supply chain management by instituting commercial practices.

Chapter Summary

This chapter presented the results of the interviews completed for this study. The data collected was analyzed to determine if the research propositions were to be accepted or rejected. The results were as follows:

Proposition 1 was rejected; the organizations who utilize third party providers contracted for comparable services.

Proposition 2 was rejected; the organizations who utilize third party providers did so for similar reasons.

Proposition 3 was rejected; the organizations decided differently when choosing whether or not to utilize third party providers.

Proposition 4 was accepted; the organizations seeking a third party logistics provider used similar criteria and reasoning when making the selection.

Proposition 5 was rejected; the organizations currently outsourcing logistics functions had different evaluation criteria for determining the success of their providers.

Proposition 6 was rejected; government organizations purchased the same services that private sector organizations purchased.

Proposition 7 was rejected; the relationship between government purchasers of logistics services and providers was different than that between private sector purchasers of logistics services and their providers.

The next chapter presents the conclusions and recommendations of the study.

V. Conclusion and Recommendations

Introduction

The previous chapter presented the data gathered during the study and evaluated the data for acceptance or rejection of the research propositions. This chapter takes that information and answers the research questions. The research questions are answered in order and the significant findings follow each answer. The chapter ends with conclusions drawn from the research and recommendations for future studies.

Specific Problem

The specific problem was to determine the current trends in contract logistics for possible application to Air Force operations. The objective of the research was to assist in gathering information on contract logistics, sometimes referred to as outsourcing, for the Air Force Materiel Command (AFMC). AFMC is seeking ways to improve service and save funds. These goals must be met while providing complete logistics support to Air Force units. Many American businesses have had similar problems and chose to contract some, or all, of their logistics functions with third party providers. This study examined their experiences and related them to Air Force operations.

Purpose of Study

The purpose of the study was identified to guide formulation of the research questions. The purpose of the study was threefold:

1. To report the results of the experience case study organizations have had with third party logistics relationships.
2. To determine characteristics of successful contract relationships by questioning both users and providers of third party logistics.

3. To propose areas for possible Air Force implementation and how the Air Force could take advantage of commercial experience.

Research Questions

The research questions supported the purpose for the study and assisted in comparing the logistics outsourcing policies of private sector organizations with each other and with the logistics policies of the Department of Defense. To guide development of research propositions the following six research questions were constructed:

1. What logistics functions have been outsourced successfully?
2. Why were the logistics functions outsourced?
3. What internal processes were used that led to the conclusion of hiring a logistics provider?
4. How is the performance of the logistics provider evaluated?
5. What services are third party logistics companies providing to the Department of Defense?
6. How is the relationship between a provider and the Department of Defense different from that of a provider and a private sector customer?

Results and Management Implications for Research Question One

What logistics functions have been outsourced successfully?

Transportation, warehousing, and supply chain management were the functions that had been successfully outsourced by those interviewed. Any of the value-added services available could be included to support one of these three functions. In instances

of complete supply chain management, transportation and warehousing management were involved as part of the chain.

Significant Findings.

This research question was supported by research proposition 1. Users of third party logistics were contracting for similar services despite the differences in their primary products or services. The users studied found outsourcing of logistics to be beneficial to their companies. Most users viewed this outsourcing not as a new phenomenon but an extension of the traditional purchasing of logistics services from outside of the organization. However, users were purchasing more than just the transportation and warehousing services that they have in the past. Because of the users' needs, providers had created a wide range of different services.

The purchase of transportation services had expanded from product movement into several other areas. Third party providers were providing and/or managing the in-house vehicle fleet that some users were keeping to complement their outsourced functions. The transportation function might be turned entirely over to the third party provider. In this case the provider would be the carrier manager and would choose which carriers were most beneficial for the user. Other carrier services purchased included multi-modal transportation and international service. While these services had been available for some time, the user was now able to purchase combinations of services from one provider instead of finding specialists for each task.

The number of services available from third party warehousing had also expanded. Some of the services offered included assembly, order picking, labeling, and repair. These services might take place in the users' facility or at a remote location. In either case the

workers were providing personnel which reduced the exposure of the user to personnel problems.

Supply chain management problems had gained increased attention and the providers were selling themselves as a total logistics solution. All of the services mentioned above, and more, could be obtained from one source. When a third party was providing full service throughout the supply chain there was only one contact for the user. Many saw this as advantage to get rid of "headaches" or "dirty work" that the user does not want to concentrate on. These included physical handling of the product into or out of warehouses or transportation modes. Because this was so manpower intensive the costs of labor and associated hiring, management, and human resources support were high and making it a prime outsourcing candidate. Also there was only one bill to pay, making logistics costs more visible and reducing the costs of contract administration.

While the user only saw one company providing supply chain management there might be many companies contracted by the provider to complete all of the services. The provider was tasked with negotiating the best rates for the user. In many cases the logistics provider was a subsidiary of a transportation company and might be more likely to subcontract with the parent company. The providers in this study indicated that there was no prejudice and that the lowest rate was negotiated regardless of the competition. They indicated that market rates were easy to determine and that business would be lost if the lowest rate was not found for the user. However, in one case the logistics subsidiary was not giving enough business to the parent firm and was reabsorbed into the parent.

When supply chain management was outsourced a large part of what the user was purchasing was information. Examples of this information included inventory levels, in-

transit shipment location, and ability to provide precise delivery times. The information management systems needed for supply chain management were extremely expensive to purchase and operate. Users desired to gain access to comprehensive information systems at less cost than they could purchase and operate systems themselves. In these cases they were leveraging the providers' investments that providers were making in computer systems. Users in this study indicated that the providers' successful information technology solutions were a key capability for the provider to have and were important to outsource.

Third party logistics users interviewed for this study were generally satisfied with their providers. There were two cases where an outsourced function was returned to in-house. In one case the provider was determined to be more expensive than in-house assets. In another case some transportation services were given to the in-house function rather than the provider because the assets were there, available, and it was "good for the company" to use them. These cases indicated a willingness for some companies to bring functions back in-house. However, the trend was to find a replacement provider if the original provider was a disappointment. Overall the attitude toward outsourcing was very positive, and outsourcing was expected to continue.

Implications for Air Force Logistics Managers.

The overall impressions of outsourcing were very positive. Air Force logistics managers should consider outsourcing when evaluating cost reductions and service improvements. Third party providers can offer expertise that may not be available in the DoD. They can provide solutions that have been tested in United States businesses and in

some cases in other DoD agencies. Large providers offer economies of scale to provide the same services at less cost.

Successfully outsourcing a particular function requires a change in management outlook. Rather than managing the day-to-day operations of the logistics function the manager needs to view the process outsourced as a whole (some users referred to the process as a “black box”). The day-to-day operations are left up to the provider and the purchaser must only monitor the results for correction, not each individual process.

Transportation, warehousing, and supply chain management are Air Force functions that are candidates for outsourcing. The experience of the users in this study suggested a slow approach to outsourcing. This allowed retention of some experts in the area to evaluate the effectiveness of the outsourcing. In addition, these personnel were available if unsuccessful outsourcing led to a return of the services to in-house provision. If following the examples of those studied, the Air Force should only outsource if the provider is cheaper or gives better service than in-house assets. In any case the users did not outsource all at once but did so incrementally. This step-by-step approach is reasonable for the Air Force as well.

Results and Management Implications for Research Question Two

Why were the logistics functions outsourced?

The answers to proposition 2 indicated two primary reasons for outsourcing logistics: reduced cost and improved service. The only other factor which gained much attention was concentrating on core competencies. The providers indicated that this was a main reason that users were coming to them. While users were not as explicit in their

discussion of core competencies they noted their "strategic activities" or indicated they would hire someone whose core competency was logistics. These comments indicate that logistics was not a core competency for them and they would rather outsource this area.

Significant Findings.

The users emphasized that reducing costs and improving service were the most important issues. These two criteria were mentioned more than any other issues. Providers also perceived that these were most important to their customers. Regarding costs, a computer manufacturer noted that the company was making less expensive products. However, the price of transportation was the same for the lower priced products as for their higher priced products. Therefore, the cost of distribution as a percentage of the product cost was going up. This company outsourced transportation to try and hold down costs.

The ability to measure logistics costs was identified as a problem. Accurate costing was required to determine the current costs and to determine if the provider was cheaper. Indications were that the unseen costs of holding inventory and multiple handling of products were difficult to quantify. Users were searching for a system that would allow them to trace all of the costs to the logistics needs of the particular product. The companies looking for answers were investigating activity-based costing as a means for isolating logistics costs.

The service capabilities of third party logistics providers were also desired by the users. Because of their size, the service providers had access to a range of services that users might not be able to purchase on their own. The providers were giving more complete service because they were making more available to the users in terms of modes

of transportation and supply chain choices. In addition, the broader information management capabilities of providers gave users information access that improved product flow through the distribution system.

Implications for Air Force Logistics Managers.

In the current DoD budget environment, managers are seeking the same cost reductions as their civilian counterparts. In this study, one user identified the conversion of fixed costs to variable costs as being important to the company. Another interviewee who represented a provider of logistics services thought this was important to the Department of Defense. This individual was a consultant facilitating DoD outsourcing initiatives and the company was in the process of trying to win a large logistics outsourcing contract. This person pointed out that the DoD should reduce fixed costs by having a smaller logistics infrastructure and let the third party industry provide the surge capacity when needed.

In the future, Air Force managers should seek to reduce investments in fixed assets. Those companies willing to provide services to the DoD believe they can handle wartime movement and deliveries. If true, the DoD can reduce its investment in fixed facilities to the level of peacetime capacity. This reduction would save operations and maintenance funds. The advantage is that surge capacity is retained more economically in the private sector than by having excess government facilities waiting for a contingency. While the Air Force is looking at base realignments and closures perhaps more facilities can be identified for cutbacks if logistics functions are outsourced.

Results and Management Implications for Research Question Three

What internal processes were used that led to the conclusion of hiring a logistics provider?

The use of propositions three and four for this research question resulted in findings that organizations determine if a provider is required in different ways. But the same organizations use similar criteria and reasoning for actually choosing a provider. There were two phases in the process to hire a third party provider. The first step was the internal decision to outsource a logistics function. This was generally left up to the logistics manager responsible for the logistics function. The second step was the hiring of the actual provider of the services. Again, the logistics manager sought out providers in coordination with other affected managers.

Significant Findings.

The first step, deciding whether or not to outsource, was already completed by the users studied. These eight organizations were already outsourcing some logistics functions. Outsourcing had grown out of normal contractual relationships. When an outsourcing relationship was already in place increased outsourcing was likely to follow. The user had knowledge of the costs of outsourcing and used them in planning broader goals. In addition, the provider was already familiar with the company and could offer customized solutions.

In the private sector, outsourcing appeared to be a tactical goal rather than a strategic one. The goal was to provide a particular function either cheaper, with better service, or both. The decision level of outsourcing within these firms occurred at the

Logistics Manager/Deployment Manager level. These managers had to get a job done at a certain cost or level of service. It was up to them to get the job done and in many cases they chose outsourcing. But, several were not reluctant to bring the function back in-house if needed. In the two government organizations studied there appeared to be a strategic decision to outsource. The reduction in personnel headcount was a primary objective, and the word from the top was to accomplish it with outsourcing.

The second step, hiring a logistics provider, was normally accomplished using a typical contracting process as outlined in Chapter IV. Customers usually sought out the third party providers. They learned of providers mostly by word of mouth. Because of this the providers considered their customer service image to be very important. Early in the contracting process the providers indicated that they acted much like consultants. Providers were learning the characteristics of the user's supply chain and of the organization itself. At that point the providers were giving their advice free. There was a point where the provider wanted to be paid, but they still wanted to win the contract. As they were presenting recommended changes they needed to convince the users of their solution before it would be accepted. The problem for providers was that they noted only about 50 percent of contracts were actually awarded to *any* firm. They were wary of giving a lot of information and then not getting the business. Potential users might have just been gathering information at this point, so providers were cautious.

The importance of interpersonal contact throughout this process cannot be overstated. Users could only see so much of the service before they purchased it. The appearance and personality of all the members of the providers' organizations was very important to the sale. Users mentioned this throughout the study. Part of the decision to

purchase was based on the matching cultures or fit of the two organizations. This started with the face-to-face meetings in the contracting process.

The providers also believed in the importance of the fit of the two organizations. For this reason, those that had attempted government contracting were uncomfortable during the process. They felt that they could not get close enough to the government organization to get the right fit with their organization. An outsourcing government contract was written by the user (the government) but in the private sector the contract was written by the provider and offered to the user. In addition, the use of the contracting officer in the Air Force placed another level between the provider and the user. This difference was a concern to the providers who were used to providing more input in the process.

Several other difficulties were mentioned when dealing with government contracting. Only two of the ten providers in this study were actually contracting with the government or actively pursuing government contracts. Those that were not voiced strong opinions that they had no intention of trying to win government contracts. The contracting process and the restrictions that a government contract places on a provider were two of the concerns. Government contracts were normally won by the qualified bidder with the lowest cost. In this service industry these providers did not feel that their high levels of service were being given enough weight when the final choice was being made. The accounting restrictions that were placed on winners of government contracts were also mentioned. While at some companies they opened their books up to their customers to share cost cutting, they were not ready to change any accounting procedures as required in some government contracts. One provider went so far as to state that,

because of these rules, the parent company would have to set up a separate subsidiary to provide service to the government.

When the contracts were written, an equal number of both providers and users preferred transaction-based contracts as those who preferred gainsharing contracts. Transaction-based contracts were written, for example, on a per shipment or per truckload basis. These types of contracts were easier for both the user and provider to monitor for payment. The gainsharing contracts were subject to constant review by both parties. If the provider was performing the service so that it saved the users money then the savings were split by both parties. This acted as an incentive to the provider to operate efficiently.

Implications for Air Force Logistics Managers.

The use of outsourcing is growing in the Air Force, as it is in the private sector. As this area increases, the Air Force should take a step-by-step approach as some of the organizations studied have. Functions should only be outsourced after careful consideration of the consequences. In the Air Force, as in the private sector, these consequences include keeping in-house personnel to oversee the contract. However, in some functions the Air Force must manage its resources so that it retains a wartime capability. Some functions may have to be addressed in terms of whether the contractor will be able to support deployments to hostile areas.

New contracting approaches are required to gain the full benefits of third party providers. One government organization was trying to make provider management and service a greater priority in awarding logistics contracts. The new process was described as analogous to "prototyping" an aircraft purchase. After high level proposals were received from many companies three were selected for a six-month test. After this test a

long-term (3-5 year) contract was awarded. All of this was within the Federal Acquisition Regulations but allowed flexibility to rate service of the providers. Cost was only the first “door” to get through to be in the final “flyoff”. This is the type of procedure that is needed to get better service contracts for the government. If these types of contracting procedures were in place perhaps more providers would consider bidding on DoD business. At this point there are only a few firms willing to bid on third party logistics contracts. If more of the firms surveyed were involved in bidding for DoD contracts the government may get a better price or wider access to provider capabilities that these providers are not currently willing to sell to the DoD.

Results and Management Implications for Research Question Four

How is the performance of the logistics provider evaluated?

When answering the protocol questions for proposition five, users indicated that cost and service performance were the key criteria used to evaluate the performance of logistics providers.

Significant Findings.

Evaluating the costs of provider service started at the writing of the contract. A baseline or benchmark had to be established so that both parties knew the direction that they were going and where potential savings were coming from. Providers indicated that the users did not always know what their costs were when they started the outsourcing process. They only perceived a problem and wanted it fixed, but had not quantified the problem yet. Understanding costs was the first step in developing performance measures.

About half of those studied were negotiating costs by opening the books of both organizations. During the contracting process the user and provider looked at each other's costs. The users' books were open to see where cost savings could be made in the logistics area. The providers' books were open so that the user could see what it costs to render the service and what would be charged on top of the costs so that the provider could make a profit. This arrangement was preferred by some of the organizations to reduce the adversarial relationships that can take place in contract negotiations. These types of negotiations can lead to gainsharing contracts where any savings made by the provider are split between the two partners. During the "open book" process, a concern of users was that the provider may also be a provider for their competitors and share privileged information.

The service performance metrics also required benchmarks to start the contract. Some contracts used the traditional transportation and warehouse measures such as on-time delivery, loss and damage, and cost per hundred weight. However, new measures that cross the boundaries of several logistics functions were becoming more common. Examples from this study included cycle time and inventory reduction. In any case, the performance measures were being tailored to each customer and even to each specific product or location.

To monitor these performance measures, providers had comprehensive management information systems in place. In most cases the user had access to all of the information in this system rather than setting up an independent system. These systems were used to track all of the measures indicated above. They were also used to aid in

billing. In some contracts the billing was done automatically after the service was rendered.

Because one of the reasons for outsourcing was to reduce staffing, successful users were able to reduce the number of personnel in their organizations. Those remaining were left to monitor the contract. Typically, there was one overall program manager with subordinates that were local coordinators and dealt directly with the provider on a daily basis. Providers had a customer service representative for larger contracts to deal directly with these representatives and solve problems.

Implications for Air Force Logistics Managers.

When evaluating contracts for third party logistics, Air Force managers should ensure that they understand their current costs. Only then can they determine if there is a cost savings when outsourcing. The same logic applies to service performance measures. A baseline of what is provided now, what level is required, and how it will be measured are requirements that must be included in the contract.

Providers are familiar with having specific services available to certain customers. Any unique functions that the Air Force needs should be requested from the provider as they are accustomed to giving individualized service. One user suggested an overall strategic contract with appendices regarding specific locations. This type of contract may be helpful to the Air Force.

Results and Management Implications for Research Question Five

What services are third party logistics companies providing to the Department of Defense?

Only two DoD organizations were interviewed. Those organizations were trying to find new areas to outsource. They were concerned with choosing these areas and the long-term implications.

Significant Findings.

Logistics providers had established the same services for the Department of Defense as they had for their private sector customers. There was currently a limited amount of third party logistics use in the DoD beyond the traditional services that were used in the past. The observed success of private sector organizations that were outsourcing had led to the start of several studies to find areas where the DoD could take advantage. The DoD organization that this study found furthest along in this process was the Defense Logistics Agency (DLA). The DLA was outsourcing warehousing and rapid delivery of critical parts. Another contract to provide supply chain management was in the trial stage.

Implications for Air Force Logistics Managers.

Since little experience is available in the DoD, Air Force managers must rely on the lessons learned in the private sector when considering why to outsource, choosing a provider, and performance measurement. In addition to the concerns of the private sector, the Air Force must consider the long-term effects on readiness.

Results and Management Implications for Research Question Six

How is the relationship between a provider and the Department of Defense different from that of a provider and a private sector customer?

Proposition 7 supported this research question and compared the responses of providers who have serviced both private sector firms and the Department of Defense. Those that had purposely avoided government business also provided responses which aided the research. A different relationship was evident between the DoD and the providers as compared to the private sector companies.

Significant Findings.

The differences between private sector third party relationships and DoD third party relationships were in the area of contract writing and administration. The Federal Acquisition Regulations (FAR) established contracting rules. These rules limited the techniques available to DoD managers to award a contract. As a result, DoD managers might not be able to exchange the same types of information that private sector users did with their providers. This might result in less effective contracts.

This study found that not all providers are willing to work through these contracting regulations to provide service to the DoD. This limits the availability of competitors for a given contract and may result in the DoD paying more than it would in the face of greater competition.

Implications for Air Force Logistics Managers.

Unless a major change in the FAR is forthcoming the Air Force will have to remain creative in its approach to outsourcing contracts. The DLA approach of a "flyoff" of potential candidates should be closely examined for repetition.

Conclusions

After consideration of the research propositions and questions, three major conclusions arose from this research. These were: the current use of third party logistics was successful and will continue to grow, an incremental approach is required, and not all providers are willing to sell their services to the Department of Defense.

Success of Third Party Logistics.

The current success and viability of the third party logistics "industry" leads to the conclusion that the Air Force could consider long-term commitments to logistics outsourcing. Users in this study were satisfied that their use of third parties improved service, reduced cost, or both. They had adopted long-term strategies based on these successes.

Providers were successful because they met customers needs. They were continuing to offer a broader range of services. These services were being tailored to specific industries or customers. Both the physical aspects of provider equipment and their training of personnel were directed toward satisfying specific customers. In this environment, Air Force managers should be able to find providers to solve specific problems.

The ability to access a wide range of assets without investing in these assets themselves was also cited by users as important. The physical infrastructure of offices and warehouses, and the need for general and specialized equipment require a large investment. Likewise, hiring, training, and retaining skilled personnel is costly. Rather than confront all of these costs, users were purchasing services specifically to rid themselves of these assets. The ability to purchase only what was required from providers

gave users the flexibility to enter or leave markets quickly. In addition, there was access to increase capabilities without the need to maintain these assets when they were not required. The Air Force is in a similar situation as it must have both steady peacetime, and wartime surge capabilities. Air Force logistics managers should consider strategic plans inclusive of third party logistics services.

An Incremental Approach.

Results from this study also indicated that those considering outsourcing should proceed slowly. Most users of third party logistics services were adding services one at a time. Generally, one part of the logistics chain, such as transportation, was outsourced as a test. Some companies chose to experiment with a particular geographic region. When successful outsourcing was realized, other outsourcing followed. These methods were recommended in case problems arose and management decided to bring these areas back in-house. Retaining some in-house capability kept expertise in the firm to evaluate the success of the outsourcing relationship. The in-house assets were also used as a basis to compare costs and service. By retaining some in-house capability users could return functions in-house if third party providers did not meet their needs.

Additional comments from users suggested that some assets were retained in-house because this gave the firm greater control. While satisfied with their provider, users retained company-owned assets because these were viewed as more responsive to last minute needs or for internal company work. This partial approach seems reasonable for the Air Force as well. Retaining organic assets will permit a comparison with provider services. Also, because responsiveness is required for Air Force mobility, the mix of provider/organic assets must be carefully chosen.

Department of Defense Contracting.

The final conclusion is that not all providers will sell to the DoD which may hinder DoD and Air Force outsourcing goals. Most third party providers contacted were not actively pursuing DoD business. Several reasons were given which were all based on the perceived difficulty of selling to, and keeping DoD customers.

Selling to the DoD was perceived as difficult because of DoD contracting regulations. Providers indicated that they compete against each other based on service. Yet, DoD contract awards are based on cost. Providers felt they could not differentiate themselves enough from the competition to win a contract. They also believed that more personal contact was needed with the user than was afforded by DoD regulations. Their primary dealings were with contracting officers rather than the eventual user of the services. When pursuing private sector customers personal contact was important and they felt this was lost when dealing with the DoD. In fact, users also expressed the importance of personal contact when *choosing* a provider.

Logistics providers were also concerned with the lack of a long-term relationship offered by a DoD contract. The perception was that the contract renewal process would come too quickly to provide payback for both the cost of winning the contract, purchasing support equipment, and readying personnel to support the contract.

As a result of these reasons, the DoD may be losing out on the expertise of some potential providers. In addition, the reduction in competition may lead to higher costs through lack of competition. It appears that most providers will not compete for DoD business until DoD adopts practices more like commercial companies.

Recommendations for Future Studies

Private sector logistics managers indicated that logistics costs were difficult to capture. Some were implementing activity-based costing to fully understand their costs. Before the DoD or the Air Force can decide whether implementing third party logistics will save funds, a solid baseline must be developed. A research objective would be to develop a baseline activity-based costing system and to compare it to provider proposals. An in-depth case study of the organization or function involved would reveal information to use in costing.

The Defense Logistics Agency has used some progressive contracting policies to implement advanced logistics practices. Suggested research is to complete a full case study of these contract procedures. Then through multiple case studies their success could be compared to other outsourcing organizations. The objective is to uncover commercial-like practices to implement on a large scale. Complete documentation of these examples could aid other government organizations considering outsourcing.

Research Summary

This study was undertaken to determine the current trends in third party logistics. The Air Force Materiel Command Lean Logistics office sought information, regarding this type of contract logistics, for use towards the goal of improving USAF logistics support. The purposes of this study were to report results sample organizations have experienced with third party logistics, determine characteristics of successful third party relationships, and to discuss the implications for USAF logistics managers.

Research propositions and research questions were developed to meet the purposes of the study. A qualitative research methodology was chosen using multiple case

studies. A three-part research design of validation and selection, data collection, and data analysis was used to implement the methodology. Logistics managers from eight third party users and ten third party providers were administered an extensive research protocol. These data were then compared using predetermined research variables.

The results revealed an industry which is growing rapidly. Users of these services were expanding their purchases. Providers were differentiating their offerings to meet specific customer needs. While the momentum for third party logistics use was strong, most managers cautioned for the use of an incremental approach to using third party logistics. This allows for an easier transition for the using organization and leaves the option open to return logistics in-house if the provider is lacking.

The majority of third party providers in this study were not interested in DoD business. For providers the perceived difficulty of competing, administering, and renewing a DoD contract was not worth the income generated. This may be restricting DoD's accessibility to firms providing the best service and/or a lower cost.

Information gathered in this study indicates that DoD logistics managers should use the methods of successful outsourcing relationships when purchasing these services. One primary method is a step-by-step approach to beginning outsourcing. The DoD may also consider changing contracting regulations to take full advantage of available services.

Appendix A: Third Party Logistics User Protocol

This research protocol was used to gather information from third party logistics users. Users were sent the protocol ahead of time to allow for preparation for the actual interview. While the interviewees were not given the research propositions, they are provided here to aid the reader. Propositions are stated in the null case first, then the questions pertaining to that proposition are listed. Propositions 6 and 7 were evaluated by comparing answers private sector users and government users gave to the previous questions.

Research Protocol

Proposition 1: The services contracted to third party logistics providers vary from organization to organization.

How would you define a third party provider?
What distribution functions are outsourced?
Are any other logistics functions outsourced?
How long has this been in place?

Proposition 2: The reasons for hiring third party logistics services varies from organization to organization.

Why outsource?
What reason(s) or event(s) drove the organization to outsource?
Why were logistics functions considered for outsourcing?
Were others considered, together or separately?
Are decisions regarding third parties included in long-range plans?

Proposition 3: The organizations considering outsourcing logistics functions each have a similar process for determining if a provider is required.

What was the process for deciding which functions to outsource?
At what management level was the decision made?
Which levels had input?

Proposition 4: The organizations seeking a third party logistics provider will use similar criteria and reasoning when making the selection.

After the decision level to outsource was made, how was the selection process carried out?

How were potential candidates initially identified?

At what management level was the selection made?

What were the key selection criteria?

Was there a trial period?

Is there a renegotiation period?

What are renegotiation major issues?

Proposition 5: Organizations purchasing logistics services calculate the success of the relationship similarly.

Do you consider these arrangements successful and why?

How is the success of this arrangements measured or evaluated?

Who takes the measurements and how often?

When the service is measured, who does the report go to and how is the information used?

Would you or did you expand any services?

What are the primary benefits?

What are the primary drawbacks?

How long is the arrangement for?

What kind of contract or alliance is used?

Is it successful?

Would you use this type of relationship again?

Who identifies and solves problems?

What information do the organizations share?

On what level do the organizations communicate?

What are the billing arrangements?

Proposition 6: The services provided to government organizations by third party logistics companies are different than those provided to the private sector.

Proposition 7: The relationship between government organizations and third party logistics providers is the same as that between private sector firms and providers.

Appendix B: Third Party Logistics Provider Protocol

This research protocol was used to gather information from third party logistics providers. Providers were sent the protocol ahead of time to allow for preparation for the actual interview. While the interviewees were not given the research propositions, they are provided here to aid the reader. Propositions are stated in the null case first, then the questions pertaining to that proposition are listed.

Research Protocol

Proposition 1: The services contracted to third party logistics providers vary from organization to organization.

What distribution functions are you providing?
Which can/can't you provide and why?
What are the most requested?
Is the service specific to certain industries?
How do you market, or find customers?

Proposition 2: The reasons for hiring third party logistics services varies from organization to organization.

Why do customers want these services outsourced?
How do they initially contact you?

Proposition 3: The organizations considering outsourcing logistics functions each have a similar process for determining if a provider is required.

How do you determine a customer's requirements?
How is the customer evaluated for potential business success?
What input do you have in the customer's selection process?

Proposition 4: The organizations seeking a third party logistics provider will use similar criteria and reasoning when making the selection.

How do you view the selection process that is used to find a provider?
How would you do it if you were outsourcing?
What are the customers asking at this point and are these the right questions?

Proposition 5: Organizations purchasing logistics services calculate the success of the relationship similarly.

What criteria are your customers using to measure your performance? Is this a fair measure of you accomplish for them?

What is the primary benefit you are giving them?

What kind of contracts or alliances are used? Are they successful? What type of relationship do you prefer?

How is success measured within the provider's organization?

How is success with the client measured?

How do you determine costs and if you are making profit from a client?

How is billing performed?

How are problems handled?

What type of information do you share?

On what level do the organizations communicate?

Proposition 6: The services provided to government organizations by third party logistics companies are different than those provided to the private sector.

What distribution functions are you providing to government organizations?

What are the most requested?

What other services do you provide to government organizations?

Proposition 7: The relationship between government organizations and third party logistics providers is the same as that between private sector firms and providers.

How are your relationships with these (government) customers different?

How is the contract negotiation process different?

How is the payment schedule different?

How are changes/problems handled?

Appendix C: Profiles of Organizations Studied

Users of Third Party Logistics Services

Company Profile 1: This company is a reseller of newsprint and all types of paper products. It is a division of a nationally recognized leader in home and office paper products.

Position of interviewee: Vice President of Logistics

Supply Chain Characteristics: The company buys and resells newsprint and other office paper products. Because of the size and weight of newsprint, warehouses are at numerous locations throughout the country to quickly serve customers.

Approach to Managing Supply Chain: Transportation and warehousing are outsourced on an as-needed basis. There is still a great deal of in-house provision of these functions. In regard to outsourcing, a decision is made separately for each location or market. There is no momentum for either choice; the facts are weighed for each decision.

General Impressions: The approach stated above is important to the company. There are some areas where they feel that they will do what is best for the company, not the industry or business standard. There is however, a concern over the costing methods that are used to compare in-house and outsourced logistics. Actions are being taken to become smarter about how to calculate them. In discussing the partnership issue, this person indicated that they are far from any sharing arrangements except for EDI transactions.

Company Profile 2: A Department of Defense Agency that procures, stores and requisitions standard items for all of the armed services.

Position of interviewee: Manager of Acquisition and Supply Transportation

Supply Chain Characteristics: Items that are purchased for “resale” to the individual services are stored in agency-owned facilities until needed.

Approach to Managing Supply Chain: Many initiatives are underway to streamline the process of delivering supplies to the customer. One includes contracting logistics for medical items along with the buy of actual supplies. The product is never physically in the hands of the agency. Rather, products are delivered directly to the customer as ordered.

General Impressions: The person interviewed believes that instead of “worrying” about the logistics of procured items that an expert should be hired to do the worrying for him. The current movement to third party logistics is driven by end strength cuts in personnel. This forced changes in the procurement system, one of which is use of outside logistics providers. Also, creative ways are being found to use private sector buying processes under current government contracting regulations.

Company Profile 3: Air Force major command headquarters office overseeing air cargo terminal operations worldwide.

Position of interviewee: Chief of Operations Plans

Supply Chain Characteristics: Air cargo terminal operations must be provided to support worldwide flights of cargo and passenger aircraft.

Approach to Managing Supply Chain: Have terminal services available as needed to support aircraft.

General Impressions: Contracting of positions formerly held by Air Force personnel is driven by cost but other factors are considered. Two are: the need for Air

Force personnel to fill the slots so they are trained on the task; and the number of personnel required to remain in-place for wartime surges. Contracts are strictly by the Federal Acquisition Regulations with no deviation.

Company Profile 4: National manufacturer of office and personal computers.

Position of interviewee: Third Party Program Manager

Supply Chain Characteristics: Inbound deliveries of parts and outbound shipments of finished goods.

Approach to Managing Supply Chain: Limited internal logistics but each case for outsourcing is made on its own merit.

General Impressions: There is a great deal of outsourcing in the company. This manager keeps a data base of providers already servicing the company, so that when a new situation arises the information is available. For this reason providers dealing with this company have a better chance of expanding their business than those trying to break in.

Company Profile 5: North American portion of international producer of frozen, prepared foods.

Position of interviewee: Director of Deployment

Supply Chain Characteristics: Inbound supplies are free on board (FOB) dock, outbound products must remain refrigerated while in-transit or in the warehouse.

Approach to Managing Supply Chain: All transportation and most warehousing is by contract. Transportation providers are seen as interchangeable; if service levels are not

satisfied the carrier is replaced. Warehouseurs are less interchangeable as there are a limited number of cold storage facilities available. The company will work longer term with warehouseurs to correct any problems with service.

General Impressions: Refrigerated warehousing availability is limited. This requires more patience with providers. An added problem is they may be working with your competitors as well. This causes some concern over rates and capabilities offered by the warehouses.

Company Profile 6: Major manufacturer of adult and pediatric food supplements.

Position of interviewee: Project Manager of Logistics Partnering

Supply Chain Characteristics: All loads are very heavy, high value product. The effort is to warehouse as little as possible with approximately 80 percent of the product delivered directly to the customer.

Approach to Managing Supply Chain: The characteristics of the product force the producer to look for available truckload carriers and in-house pooling. As a food producer, the company requires clean trucks. There is a constant search for other food producer's shipments where this company's goods may serve as a backhaul and vice versa.

General Impressions: The company used contracted logistics services for many years, before it came "in fashion". The transactions are all straightforward with little incentives or partnership arrangements. Despite the current changes in the distribution industry, no major changes have taken place, or are anticipated.

Company Profile 7: Food manufacturing conglomerate.

Position of interviewee: Director of Transportation

Supply Chain Characteristics: Delivery of products to the distribution centers, warehousing, and final delivery to stores.

Approach to Managing Supply Chain: After many years of in-house transportation, there are few remaining in-house assets. Third parties transport and warehouse all products but inventory control remains in the company.

General Impressions: The company representative believes that provider experience has not caught up with the growth in the industry. As a result, he must look for providers that have quality people in their firm. The conversion of his own fixed costs, to variable, was also very important.

Company Profile 8: Diversified manufacturer of industrial products, glass, paints and coatings.

Position of interviewee: Distribution Director

Supply Chain Characteristics: Transportation and warehousing are needed for both bulk materials and finished goods.

Approach to Managing Supply Chain: There are sixteen different business units but warehousing is centrally managed to take advantage of economies of scale

General Impressions: Traditional use of contract transportation and warehousing has taken place for many years. Growth areas are those where the electronic systems capabilities of providers can improve company operations.

Providers of Third Party Logistics Services

Company Profile 1: Global logistics division of international cargo carrier.

Position of interviewee: Logistics Account Representative

Supply Chain Services Provided: Transportation, warehousing, electronic data interchange (EDI), reverse logistics, all with rapid response.

Approach to Managing Supply Chain: The company looks to provide complete services because customers are looking for services that they don't want to own. All of the value-added services are tied to express logistics with up to 72-hour response time desired.

General Impressions: The company and its customers are thinking globally, with forward supply and transportation points being opened around the world. The large amount of value-added services thus demanded means that the logistics company must sometimes partner with companies who are best at these services.

Company Profile 2: Logistics arm of class I railroad.

Position of interviewee: Conference call with two members of the Customer Response Team

Supply Chain Services Provided: Transportation, warehousing and inventory management.

Approach to Managing Supply Chain: Looking for customers who need time-specific arrivals for high value products. Small contracts can often grow as improvements are made in service.

General Impressions: Reducing cycle time is the primary goal of most customers. While some contracts may start out providing a single function, they normally grow as the two organizations get familiar and the provider offers solutions whether solicited or not.

Company Profile 3: Third party logistics arm of national truck leasing firm.

Position of interviewee: Manager, Business Development

Supply Chain Services Provided: Total logistics support from origin to consumption. No government customers at this time.

Approach to Managing Supply Chain: First, find good fit between customer and provider. Not all potential customers are taken on. Next, start with clean sheet and draw up specific plan for that customer. Results are measured by independently administered surveys.

General Impressions: The company at first acts like a consultant and may in fact have to instruct the user on what services are available in the marketplace. Finding a partner with the same philosophy and culture makes for a better relationship. This is required because of the large start-up costs borne by the provider.

Company Profile 4: Wholly owned subsidiary of heavy equipment and equipment parts manufacturer.

Position of interviewee: Manager, Inventory Management Group

Supply Chain Services Provided: Warehousing, transportation, inventory management, software systems.

Approach to Managing Supply Chain: The company prefers to provide for companies similar to their parent company who have large parts inventories. As a result, they look for a good match of user needs with their experience.

General Impressions: The company goes after only large customers. They feel confident in their ability to attract customers who must pay a higher rate for their premium service. Primary customers are those mentioned above who are a match with the provider's capabilities.

Company Profile 5: Logistics provider that is a subsidiary of a major trucking company.

Position of interviewee: Regional Vice President of Sales and Marketing

Supply Chain Services Provided: Just-in-Time inbound, finished goods outbound, transportation management and outbound deployment.

Approach to Managing Supply Chain: The company tries to focus on certain industries: automotive and heavy equipment, health care, retailing and consumer goods, and high tech. Their strength is providing service to those that require high quality service levels.

General Impressions: This representative believes that customers should be smarter about their own business and what is required before coming to the third party provider. One example given was that of the customers that seek this provider out, about 50 percent do not even award a contract (to anyone) after seeking the logistics companies' bids. These users may not know where they are in their industry or where they want to be.

Company Profile 6: Logistics provider that is a subsidiary of a major trucking company.

Position of interviewee: Vice President of Business Development

Supply Chain Services Provided: All logistics functions except for warehousing which is subcontracted.

Approach to Managing Supply Chain: No specifics, just try to reengineer the whole process.

General Impressions: The company believes they do a lot of teaching to the customers about logistics and costs. This person went as far as saying they are teaching the consultants that users hire as well. Because of restrictive government rules the company will not consider taking government contracts.

Company Profile 7: Major provider of overnight package delivery services.

Position of interviewee: Head of Customer Service

Supply Chain Services Provided: Hub-based warehousing, regional warehousing, reverse logistics

Approach to Managing Supply Chain: Market segmented down to those customers that need highly reliable overnight service for cargo under 150 lbs. Additional services are available to include warehousing and remarking the products in preparation for rapid delivery.

General Impressions: This company has concentrated on a small segment of the market, but one that is growing. While overnight delivery is the main strength, they are increasing value-added services to fit specific customers.

Company Profile 8: Freight brokerage company with few company-owned assets.

Position of interviewee: Logistics Services Manager

Supply Chain Services Provided: Primarily, finding carriers for customers who need transportation service. The company is decentralized, with 120 branches nationwide. When an account is identified which encompasses several regions then the headquarters office (from whom the data was gathered) provides customer service.

Approach to Managing Supply Chain: Initially, the branch offices are there to provide rapid response for carrier service by quickly matching loads with carriers. Later, if a constant flow is expected then a full account is developed.

General Impressions: The company is able to provide "guaranteed" pickups by being in communication with many carriers. Business is expected to grow from these small transactions. Sometimes assets are purchased to solve customer-unique problems.

Company Profile 9: Large regional (west coast) warehousing company.

Position of interviewee: Vice President, Special Services

Supply Chain Services Provided: Public warehousing, private warehousing, military commissary delivery, transportation

Approach to Managing Supply Chain: Separate divisions serve niche markets; business for divisions often comes from recommendations of other areas of the company.

General Impressions: Services, types of contracts, and billing are different for each type of customer. The company plans to expand but may not take on smaller customers as a result.

Company Profile 10: Wholly owned subsidiary of major overnight package service.

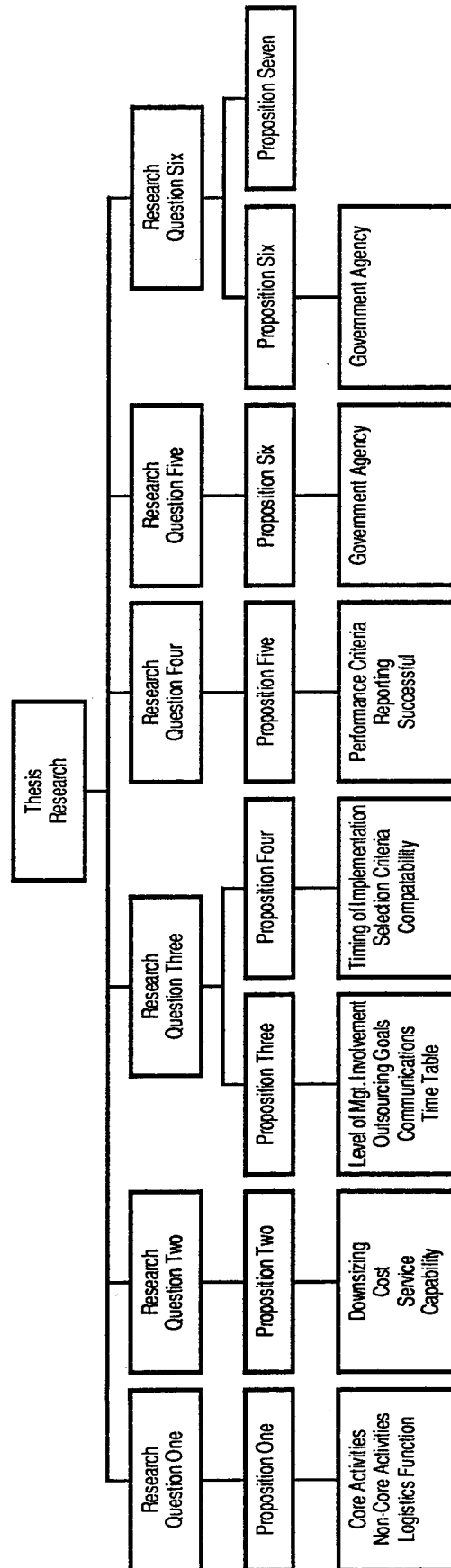
Position of interviewee: Business Development Manager

Supply Chain Services Provided: Supply chain management, truck leasing services

Approach to Managing Supply Chain: Leverage assets of large overnight express parent corporation to aid supply chain management of customers.

General Impressions: The interviewee believes that many companies don't want to "get their hands dirty" in logistics and are glad to outsource. Growth in customers is among those that are expanding overseas and needing expertise.

Appendix D, Relationship of Research Questions, Propositions, and Variables



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Vita

Captain Thomas J. Thompson was born on 4 June 1959 in Bristol, Pennsylvania. He graduated from Neshaminy-Maple Point High School in 1977 and enlisted in the United States Air Force. He completed his undergraduate studies at Embry-Riddle Aeronautical University, European Campus. He graduated with a degree in Aviation Business Administration in 1988 and received his commission upon graduation from Officer Training School on 17 March 1989.

His initial assignment, as an officer, was as Vehicle Operations Officer, and later Chief, Vehicle Maintenance, at Mountain Home AFB, ID. In January 1993 he was reassigned to Dover AFB, DE and held several positions including Chief, Aerial Port Mobility Flight. He entered the Graduate School of Logistics and Acquisition Management, Air Force Institute of Technology in May 1995.

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12b. DISTRIBUTION CODE**13. ABSTRACT (Maximum 200 Words)**

This study was undertaken to determine the current trends in third party logistics. The Air Force Materiel Command Lean Logistics office sought information for improving USAF logistics support. The purposes of this study were to report results of third party logistics use, determine characteristics of successful third party relationships, and to discuss the implications for USAF logistics managers. A qualitative research methodology was chosen using multiple case studies. Logistics managers from eight third party users and ten third party providers were administered an extensive research protocol.

The results revealed an industry which is growing rapidly. While the momentum for third party logistics use was strong, most managers cautioned for the use of an incremental approach to using third party logistics. This permits an easier transition for the using organization and leaves the option open to return logistics in-house if the provider is lacking.

The majority of third party providers in this study were not interested in DoD business. Providers indicated that the perceived difficulty of competing, administering, and renewing a DoD contract was not worth the income generated. This may be restricting DoD's accessibility to firms providing the best service and/or a lower cost.

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