AN APPLICATION OF LONG TERM CONTRACT TO REDUCE THE SEA FREIGHT COST: A CASE STUDY OF A FREIGHT FORWARDING COMPANY

By
YUECHENG ZHAO

A Final Report of the Six-Credit Course
SCM 2202 Graduate Project

Submitted in Partial Fulfillment of the Requirements for the Degree of
MASTER OF SCIENCE IN SUPPLY CHAIN MANAGEMENT

Martin de Tours School of Management
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I, Yuecheng Zhao declare that this thesis/project and the work presented in it are my own and have been generated by me as the result of my own original research.

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Yuecheng Zhao
Assumption University
August 2014

ABSTRACT

The main purpose of this study is to understand the factors regarding sea freight cost reduction by making a long term contract with ocean liners in a freight forwarding company. The objectives are: 1) to reduce the sea freight cost using the long term contract purchasing method. 2) To find a root cause that reduces the sea freight cost exporting from Bangkok to Shanghai port. This will help ABC shipping group reduce customer losses and also get more benefits.

The fact that sea freight has a significant impact on the supply chain is now widely accepted. Its cost is a major component of total cost. This study focuses to reduce the sea freight cost. Sea freight cost has a high commonality in the freight forwarding industry from upstream to downstream. The logical approach of eliminating the needlessness contributes to reducing the total supply chain cost.

The results show that using the long term contract purchasing from ocean liners could reduce the sea freight cost of a freight forwarding company. In this research it only focuses on the Shanghai port, furthermore ABC will try to make a long term contract in all of its export ports to reduce the sea freight cost and achieve the officer price which is more competitive than competitor's.

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and hereby certify that the verbiage, spelling and format is commensurate with the quality of internationally acceptable writing standards for a master degree in supply chain management.

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Date: August 26, 2014

CHAPTER I

GENERALITIES OF THE STUDY

Nowadays international trade and transportation have become more and more popular as we have become a global society. Sea freight is the main traffic for international trade and the fact that sea freight cost is significantly cheaper than air freight cost is widely accepted. The statistics show that 90% of the cargo is transported by sea freight in the world. The U.S. maritime transportation system carries 95 percent of U.S. foreign trade. Each year, ships move two billion tons of freight in and out of the U.S.A's ports (NOAA U.S.A.).

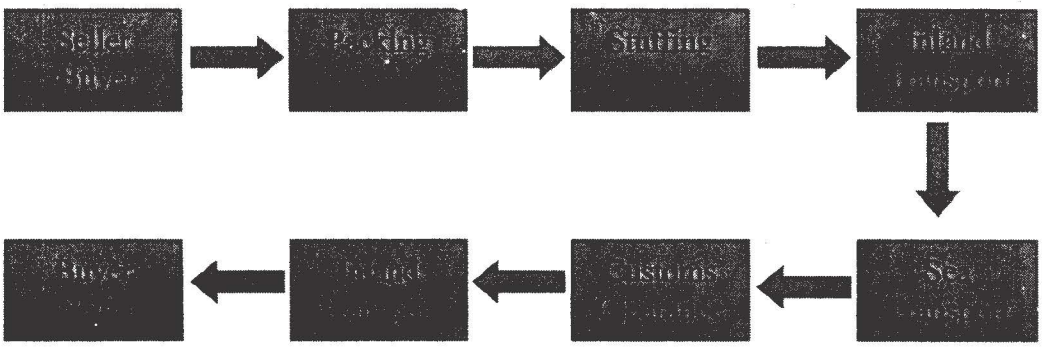
The reduction of the sea freight cost has a significance in the saving of total cost in the supply chain. This study focuses on the decreasing cost of sea freight for the freight forwarding company through the optimizing of the contract between the freight forwarding and ocean liner companies.

1.1 Background of the Study

ABC shipping group is a freight forwarding company located in Bangkok, it was established in 1981. ABC has another operations branch in Pattaya city, close to Laemchabang port to fulfill the requirement of the sea freight service to customers.

A freight forwarding company is generally called a 'Non-Vessel Operating Common Carrier (NVOCC)'. As the wording of NVOCC shows, freight forwarding companies don't have the vessel or aircraft to transport the customer's cargo. Freight forwarding companies purchases the space from a liner or airline and issue the bills of lading generally called 'BL'. In this industry, there are two methods to purchase the space from the ocean liner, i.e., spot purchasing and long term contracts. Freight forwarding companies arranges the whole process related with logistics activities includes arranging the inland transport, booking the vessel and customs clearance, etc. as shown in figure 1.1.

Figure 1.1: Sea Freight Forwarding Flow



Source: Author

According to the TIFFA (Thai International Freight Forwarder Association) there are 201 freight forwarding members in Thailand (Tiffathai.org) and this statistic indicates the freight forwarding market is highly competitive. To win a place in this competitive market, ABC places the importance on offering a one-stop-service to customers. The service model that fulfills the entire requirement of customers with logistics is called a one-stop-service. A one-stop-service includes both domestic and international transport, customs clearance and packing service. The core service menu of ABC is as follows.

(a) Packing
(b) Stuffing and un-stuffing
(c) Inland transport
(d) Sea freight both FCL (full container load) and LCL(less than container load)
(e) Custom clearance
(f) Air freight service
(g) Warehousing
(h) Re-export specific in exhibition cargo

1.2 Statement of the Problem

This study focuses on improving the cost structure of ABC. The majority of the cost of ABC is sea freight cost purchasing from ocean liners. Currently, ABC adopts spot purchasing which is more expensive than the long term contracts from ocean liners

and ABC realized the competitors who adopt different purchasing method, i.e., long term contracts and market share is obtained by their competitors. In comparison of the selling rate between ABC and competitors, it is obvious that the freight cost of ABC is higher than its competitors. From table 1.1 it clearly shows the 40' container export to shanghai port has been reduced. Customers selected the competitor's service and export quantity reduced 57% between July-December 2012 to January-June 2014.

Table 1.1: Container Export to Shanghai Port Flow

Period	Port of Arrive	20'container	40' container	Total
Jul-Dec 2012	Shanghai	171	313	484
Jan-Jun 2013	Shanghai	161	263	424
Jul-Dec 2013	Shanghai	133	188	321
Jan-Jun 2014	Shanghai	121	133	254

Source: ABC Shipping Group

Table 1.2 Sea Freight Offer Price among ABC and Two Competitors

Port Departure: Bangkok					
Competitor 1 Sea Freight Offer Price			ABC Shipping Group Sea Freight Offer Price		
Qty	Destination	Price (USD)	Qty	Destination	Price (USD)
1*40'	Shanghai	450	1*40'	Shanghai	510
Competitor 2 Sea Freight Offer Price			ABC Shipping Group Sea Freight Offer Price		
Qty	Destination	Price (USD)	Qty	Destination	Price (USD)
1* 40'	Shanghai	450	1*40	Shanghai	510

Source: ABC Shipping Group

Table 1.1 show that sales revenue of ABC is declining and it causes the loss of orders from customers. Table1.2 shows that the offered price was higher than competitor's price; the higher sea freight cost led the higher price. Generally speaking, freight forwarding has two kinds of purchasing method to buy the sea freight from ocean liners, that is, spot purchasing and long term contract. Currently, ABC uses spot purchasing to purchase the sea freight from liners. Therefore, this research attempts to

answer the question "How the long term contract contributes to the cost structure of a freight forwarding company? "

1.3 Research Objectives

This paper aims to achieve the main objectives:

1.3.1 To reduce the sea freight cost using the long term contract purchasing method.

1.3.2 To find a root cause that reduces the sea freight cost exporting from Bangkok to Shanghai port.

1.4 Scope of the Research

The scope of this research is to study the pros and cons between spot purchasing and long term contracts. This will be evaluated in the total cost from the ocean liners in each buying method and volume assumptions based on the current volume of ABC. The cost effectiveness between spot purchasing and long term contracts will be compared and analyzed. The spot purchasing has a benefit in terms of settlement without deposit, a variety of selecting the ocean liners. Therefore, ABC applies spot purchasing method.

This research focuses on purchasing from the liners of OOCL, K-Line and Yangming liners and collects the volume adapted from two main customers' customer 1 and customer 2 in Bangkok. The data will be collected from ABC shipping group from January to June 2014. This research focused 40' container export to Shanghai port. The freight forwarding industry, inland freight service sea freight service and purchasing method will be studied in the literature review. The purchasing method will be studied in detail.

1.5 Limitation of the Research

The research will focus on ABC and their cooperating ocean liners and all the data used is real carrier data and ABC's data, so the results are not necessarily representative of the entire business of shippers who use freight forwarder services nationwide. Also, the results from this research cannot necessarily be applied to other industries.

1.6 Significance of the Research

The results of this study motivate the freight forwarding companies to implement the purchase method in the container booking part. The researcher used the long term container booking method let the company obtain more benefit. Furthermore the researcher can reduce the sea freight from the Bangkok to Shanghai Port.

The study has a significance in maintaining customers as well as bringing more income for the company. This will contribute to reducing the total supply chain cost.

1.7 Definition of Terms

Freight Forwarding Company

A freight forwarding company usually acts as an agent of the shipper and not as carrier. Some of its principal activities include preparing and filing export and bank documentation and negotiating freight rates on the shipper's behalf. They purchase transport service from carriers, then they consolidate small shipments from a number of shippers into large shipments that move at a lower rate (James & Douglas, 2001).

Long Term Contract

Long term contracts are the contract purchases that are made on a continuing basis for a specified or indefinite period of time, typically exceeding one

year (Monczka, Handfield, Giunipero, & Patterson 2011).

Ocean Liner Any person actually performing the carriage of the goods with his own means of transport in the ocean (Bugden, 1999).

Shipper The person (corporate or otherwise who may or may not be the customer) whose goods are dispatched for delivery by the carrier to the consignee (Foxton, Berry, Eder, Burrows, Smith & Boyd, 2008).

Spot Purchasing Spot purchasing is a new and strange idea to many voluntary organizations but is becoming more common as public bodies seek to reduce costs (Nigel, 2013).

CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter describes related literature from previous studies that focused on the long term contracts. This chapter will introduce the freight forwarding industry, inland freight service, sea freight service and purchasing contracts. This literature review aims to enhance the understanding of the role of the contract and long term contract in a freight forwarding company.

2.1 Freight Forwarding Industry

Gadde and Hakansson (2001) stated that the role of freight forwarding is in offering a logistics service, moving raw materials to finished products on behalf of customers. It is an agent company between exporter/importer and ocean liners. The benefit of a freight forwarding company is trying to get lower sea freight from the ocean liners after that sale to the exporter/importer get the commission from this process.

2.1.1 Freight Forwarding Company

A freight forwarding company is a company that helps the operators to transport the product and it could be considered as a logistics service provider. Normally freight forwarding doesn't own a vessel or airplane. Murphy and Daley (2001) stated that freight forwarding is another term for a logistics service provider. A freight forwarding company is an intermediary who provides logistic services but normally does not own a lot of assets. Daley and Murphy (1995) identified five major tasks of freight forwarding: paying freight charges, tracing and expediting shipments, making routing recommendations, issuing export declarations, and preparing certificates of origin.

When a freight forwarding company's representatives of the shipper (exporter) the service includes: 1) Selecting the transport route, mode of transport and appropriate ocean liners; 2) to the selected ocean liner they provide canvassing, booking; 3) pick

up the goods and issue the relevant documents; 4) packing; 5) storage; 6) weighing and volume sizes; 7) arrange insurance; 8) handle the cargo for customs declaration and documentation procedures, and then delivery of the goods to the ocean liners; 9) pay the freight and other costs; 10) receive the original bill of lading which has been issued and delivered to the consignor; 11) arrange transshipment; 12) notice consignee cargo location; 13) record the case of lost cargo; 14) assist the consignee claims against the responsible party.

When a freight forwarding company is the representatives of the consignee (importer) the service will include 1) report of cargo location; 2) receive and check all transport-related documents; 3) the cargo delivery and payment of freight; 4) the declaration payment and other expenses; 5) arrangements during transport warehousing; 6) clearance of goods delivered to the consignee; 7) assisting the consignee in storage or distribution of the goods.

Small and middle freight forwarding companies just provide the basics freight service, they offer the full container load service (FCL) and less container load (LCL) services, also some of them provide air freight service and customs broker service. The inland freight service may hire some other inland freight companies to help them deliver goods to the right place and at the right time.

A large freight forwarding company could say as a logistics provider it will register with more investment equipment and technology, it could be a provider of more services than a small or middle sized freight forwarding firm, which has own assets and networks. Such as: EDI service, RFID service, inventory management, warehousing facilitates, their own tracking and tracing system, project handing and distribution.

2.1.2 Ocean Liner

Ocean liner means the ocean carrier company, own the vessels, they are a corporation with the freight forwarding company, freight forwarding company booking the container from them then selling to the freight forwarding's customer. Also, they

could provide a door to door service. They own shipping lines around the world. Haralambides (2007) stated that historically the shipping industry is categorized into two major sectors. First is the bulk shipping sector. In terms of marketing, it mainly provides transport services for moving raw materials from place to place. Secondly is the ocean liner shipping sector which is involved with the transporting of semi-finished products or finished goods across the country.

Furthermore, every ocean liner provides different logistic services; the differences are according to the company's policies. The following information comes from each ocean liner's website like Evergreen liners, OOCL Liners, Yang Ming liners and so on. Thus the detail of the ocean liner's could be explained by the follow details:

1) Export goods business. Including warehousing, storage, shipping companies for a single dock/yard mention cabinets, meanwhile, according to customers' needs of providing support services, such as the export declaration pay agents, sub/paste marks, packaging and child care, packaging, fumigation, small distribution, etc.
2) Imported goods business. Including import customs clearance agent, according to other needs of customers and provide appropriate support services, for packaging, delivery, payment collection, etc.
3) General cargo business. Handling general cargo warehousing services.
4) Cargo tracking and tracing.
5) Multimodal service (railways, sea and inland freight) and supply chain solutions.
6) Worldwide service networks (owned a sea freight network in worldwide).
7) Customer services like: EDI (Electronic Data Interchanges), AMS (Automated Manifest System), ISF (Import Security Filling), shipment statistics, account statement and cargo manifest report.

2.2 Inland freight service

James et al. (2001) stated that inland freight is one of the basic transport modes. It refers to the road for the transport lines, the use of cars and other land vehicles do the domestic or cross-border movement of goods in order to complete the transportation. It could be identified as (TL) truck load and (LTL) less than truck load. It is one of the

main foreign trade and domestic cargo transport processes; it is also important for material distribution in the station, ports and airports. In this research inland freight means transport of the product from the customers factory to the port.

The characteristics of inland freight are:

Flexible, adaptable. Due to an inland freight network density being generally higher than that of the railways, and ten times larger than waterways network, the surface is also widely distributed, so inland freight vehicles can be big and flexible more than others. Inland freight in terms of time and mobility is relatively large, the vehicle can always have scheduling, shipping, link up time are shorter time. Especially inland freight of passengers, cargo volume has strong adaptability.

Can achieve "door to door" direct transport. Due to the small car size, running widely distributed along the road network, it also can leave the road network deep into factories and enterprises, farm, urban residential, etc., that can put passengers and goods from origin to destination directly to achieve "door to door" transport. This is one of the characteristics of other modes of transport which cannot be compared with inland freight.

In short-distance transport, fast delivery. In the short-distance transport, inland freight can be achieved because the "door to door" direct transport can deliver directly to the passenger and freight up to the destination, so compared with other modes of transport the passenger and cargo transit time is shorter and a faster delivery.

Less investment, cash flow runs quickly. Compared with water, and air freight, the fixed facilities are simple where vehicle purchase costs are generally lower, therefore, invest in easy and short payback periods. After that, under normal operating conditions, the annual investment in inland freight has a turnover of 1-3 times while rail transport will need three to four years for turnaround time.

Vehicle driving is easier. Compared with training requirements for pilots or train drivers, the car are easier to drive, the quality requirements of the driver are also

lower than others.

The last is the disadvantage of inland freight. Small volumes, high transport costs. Currently, the world's largest car is general motors' which produced mining trucks, more than 20 meters long, weighing 610t, load 350t, but still lower than trains and ships; due to the small car load driving resistance of larger than railway of 9 to 14 times, with a consumption of fuel using higher prices of liquid gasoline or diesel, therefore, in addition to air transport the transportation costs are the highest.

2.3 Sea Freight Service

Sea freight is the most important international logistics transportation. Sea freight is the mode of the transportation of goods by containers on the vessel across the country. The container capacity can allow the exporter to have more control in the quality of product among delivery until the customer receives the cargo at the destination point. According Zeng (2003), Creazza, Dallari and Melacini (2010) sea fright services can be separated to FCL (full container load) service and LCL (less than container Load) service.

The characteristics of sea freight are:

A natural waterway. It is carried out by natural waterways of transportation, without roads, the track limiting pass ability are stronger. With the changes of the political, and economic environment and natural conditions, it can always adjust and change sea lines to complete the transportation tasks.

Carrying large. With the development of the international shipping industry, modern ship building technology has increased so quick, the vessels have became more and more huge. Super-giant oil tankers have reached more than 60 million tons; the fifth generation of container ships ballast tanks have a capacity which has exceeded 5100TEU.

Lower freight. Sea freight channels are formed naturally, port facilities are generally

built by the government, and the companies engaged in shipping business could save a lot of investment for infrastructure. Ships carrying capacity, long use time, far transportation mileage, lower unit transportation costs, and provided favorable conditions for low-value bulk cargo transportation.

2.3.1 Full Container Load Cost

Creazza et al. (2010) and Zeng (2003) stated that full container load service (FCL) is a kind of transportation mode that allows the exporter to deliver cargo to their customers and enjoy economies of scale of container capacity to load cargo by large volume with a competitive cost. The consignor is responsible for packing, counting, stowage and seals plus freight. However, the freight forwarding can also be commissioned in the freight station during unpacking. Unless cargo carrier's accidents indeed proof of damage, the carrier was liable to pay compensation. Normally the FCL container size has: 20'GP, 40'GP, and 40'HC. The GP means general purpose (Containers) HC means high cube containers.

The size detail as following:

1) 20'GP: 5898mm (length) x 2352mm (Wide) x 2393mm (high).
2) 40'GP: 12032mm (length) x 2352mm (Wide) x 2393mm (high).
3) 40'HC 12032mm (length) x 2352mm (Wide) x 2698mm (high).

2.3.2 Less Than Container Load Cost

According Creazza et al. (2010) LCL (less than container load) shipping is a good way to ship large orders and items that are large and heavy or some product that could not fill the entire container. LCL shipping is based primarily on volume with a minimum shipment volume of one cubic meter. Such products are usually canvassing by the carrier and container freight station or inland stations, and after two or two more cargo consolidations in a container, the container freight station or to the same destination were delivered.

2.4 Purchasing Method

Devra (2014) stated that business purchasing is a process of supplies and material procurement, where commercial purchasing has a very different scope and size and may be suitable for one type of spending but not for another purchasing method; most companies use a variety of strategies. There are two kinds of types of purchasing methods in the freight forwarding industry: long term contracts and spot purchasing.

2.4.1 Long Term Contract

According Monczka, Handfield, Giunipero and Patterson (2011) long term contracts are contracts of purchase that are made for a period of time, typically exceeding one year. Because long term contracts involve greater commitments into the future, the contractual terms and conditions must be carefully developed. After signing the contract, both of them have strictly defined obligations. In this literature it means the freight forwarder uses a long term contract strategy in the container booking part with an ocean liner company.

For many container cargo operators, the majority of their bookings are under long term contracts with shippers. Such long term agreements help carriers support requests for the large amounts of capital required to run their businesses. For some carriers, annual contracts all date to the same time of year and may cause a flurry of activity to re-negotiate the terms and solidify the next year's business. Regardless of timing, these contracts form a significant part of the revenue stream for a container carrier and negotiating the right prices and terms can be a major contributor to overall profitability. In this research, when signing long term agreements, the buyer will have a strong position compared to the supplier.

There are some advantages and disadvantages that accompany long-term contracts; this is recognized in both the public and private sectors.

Table 2.1 Advantages and Disadvantages of Long-Term Contracts

Potential Advantage	Potential Disadvantage
Assurance of supply	Supplier opportunism
Access to supplier technology	Selecting the wrong supplier
Access to cost/price information	Supplier volume uncertainty
Volume leveraging	Supplier forgoes other business
Supplier receives better information for planning	Buyer is unreasonable

Source: Adapted from Monczka, et al (2011)

2.4.1.1 Advantage of Long Term Contract

Assurance of supply. In the freight forwarding industry when a freight forwarder makes a long term contract with an ocean liner it needs to make sure of the container supply, ocean liners give a priority to the freight forwarders according to the contract and freight forwarders will not worry when the high season came and it isn't easy to find an ocean liner for a sea freight container.

Access to supplier technology. In some ocean liners they may have the new technology like the EDI system. When ocean liners make a long term contract; they will let the freight forwarding access their systems.

Access to cost/price information. "Long term contracts create greater incentives for suppliers to improve or expand their processes through capital improvements because they are able to spread their fixed costs over a larger volume (Monczka et al., 2011). Normally if the freight forwarding company plans to make a long term contract, it should provide a deposit to the ocean liner, they ocean liner could get more capital from a long term contract.

Volume leveraging. When a freight forwarding company wants to make a long term contract with an ocean liner, it should have volume leveraging. It needs a minimum volume before making a long contract, otherwise if volume is not enough the ocean liner will not provide long term contracts to freight forwarding companies.

Suppliers receive better information for planning. After buyers (freight forwarding

company) and sellers (ocean liner) make a long term contract, the supplier gets good information for planning and it easily and effectively makes schedules, and also could get more benefits.

2.4.1.2 Disadvantage of Long Term Contract

Supplier opportunism. From the buyer's perspective, there is a major risk that the supplier will become too complacent and lose motivation to maintain or improve performance as the contract progresses (Monczka et al., 2011). This will be a risk for the buyer (freight forwarding company) and sometimes the supplier (ocean liner) does not have a good attitude for this.

Selecting the wrong supplier. This will be happen when a freight forwarding company chooses a small ocean liner where the ocean liner can't make sure the container provided volume or that ocean liner didn't provide some shipping line, if in this case the freight forwarding company needs to use other ocean liner to confirm the shipping line could be transported.

Supplier volume uncertainty. This reason normally will not happen between the freight forwarder and ocean liner. But also there are some special situations that could happen, like the vessel of the ocean liner wrecks, at that time the supply volume will become uncertain.

The last point is a supplier forgoes other business and the buyer is unreasonable and does not have a big relation with the freight forwarding industry, or the supplier forgoes which means the supplier may get locked buy the buyer's and will lose several profitable business opportunities. The last one is the buyer is just unreasonable which means the buyer has a small volume or is not able to recover the contract.

2.4.2 Spot Purchasing

Nigel (2013) stated that spot purchasing is a new and strange idea to many voluntary organizations but is becoming more common as public bodies seek to reduce costs. It

could reduce higher capital risks. Spot purchasing refers to commercial enterprises fully autonomously negotiating pricing directly through the market to the supplier and immediately conducting procurement. In the freight forwarding industry it means the freight forwarder buys sea freight in spot.

2.4.2.1 Advantages Spot Purchasing

According to Geoff and Ken (2002) there are some advantages of spot purchasing. First, selecting the best overall deal at the time of purchase. The advantage of the spot purchasing is dealing at the time of purchasing or saying the time is more flexible. When do you need service, what time to purchase, and immediately be able to obtain the necessary commodities. Companies just need to focus on one day or one week volume after that buy in spot.

Second, no personal relationship. Compared with long term contracts, spot purchasing needs no personal relationship with the supplier. Spot purchasing could be changed by the supplier time to time and normally does not keep a long term relationship with the supplier.

Third, good for standard products with low switching cost and when annual expenditure is high. Spot purchasing could be able to adapt to changing according to market demand changes. When it demands high purchases could be more; when demand is low, the purchase could less. Low price of a commodity on the market, it can be appropriate to purchase more; when price of a commodity on the market is high, maybe purchase a small quantity which can be just enough for the demand.

2.4.4.2 Disadvantages Spot Purchasing

Geoff and Ken (2002) stated the disadvantages of spot purchasing were: First, expect low priority and low motivation from suppliers. In the freight forwarding industry, if the freight forwarding company uses spot purchasing to book containers with the ocean liners they will lose priority form ocean liners because of the priority of the ocean liner will be provided to the company who makes a long contract with them.

Because the company didn't have a long term cooperation partnership with the supplier.

Second, using many different suppliers will involve a high cost. The main drawback of spot purchases is there are no stable resources. When a commodity is in short supply on the market, you may want to purchase but no product are available to be provided so it will let the buyer change to a different supplier to make sure they get the supply. Sometimes they are even able to purchase, but this type of product may not be the original brand and quality and also will led to using a different supplier which will led to purchasing costs being higher.

2.5 Summary

From the literature, the researcher will use knowledge and tools such as the long term contract to apply and adapt, focusing on improving the sea freight purchasing method. The next chapter will then discuss the proposed steps and methodology to solve the research problem.

The previous successfully studies have been reviewed as Table 2.2.

Table 2.2: Previous Studies of Long Term Contract

Author	Objectives	Value	Result
Christopher (2008) "Balancing Government Risks with Contractors Incentives in Performance Based Logistics Contracts"	To identify the factors that have the most influence on contract structure, then indentify long term PBL contract which will bring more benefit for the government purchasing	Benefit sharing provided make long-term contract investments and financial returns from improved efficiencies should be shared whenever possible	According to the profit sharing elements, flexible performance, and eventual fixed price objectives are congruent and should enable a long-term contract.

Table 2.2: Previous Studies of Long Term Contract (Continued)

Author	Objectives	Value	Result
Robert and Serguei (2009) "Long-Term Contracts Under the Threat of Supplier Default"	Analyze and evaluate the performance of both long term and short term contracts when suppliers face a risk of what kind of contract could be preferred.	Found that long-term dynamic contracts perform better than static contracts and it could get more optimal profit.	The results complement the value of long-term contracts in supply chains would take more benefit for the buyer.
Scott (2013) "Long-Term Contracts and Short-Term Commitment: Price Determination for Heterogeneous Freight Transactions"	Identify and use long term contracts in heterogeneous freight transactions could bring more benefit,	Though using the long-term contracts between the driver and carrier in the US truck industry could get more benefit.	Using the long term contracts could save costs for heterogeneous transactions.

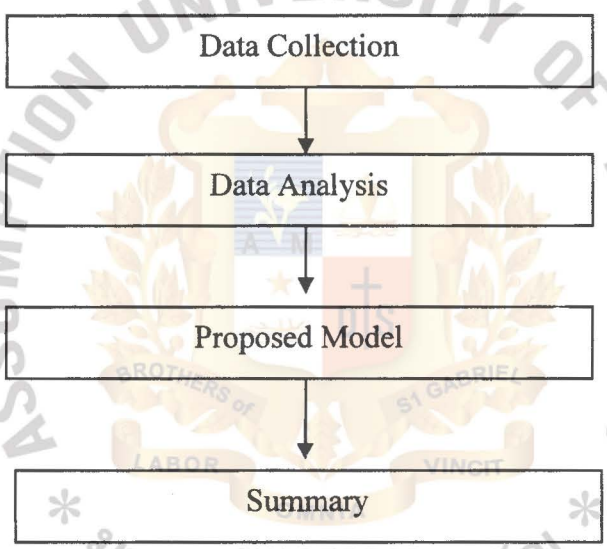
Source: Author

CHAPTER III

RESEARCH METHODOLOGY

This chapter has written the methodology of this research. First it explains how to collect the data, then how the data will be analyzed and compared, after that is the proposed model of the research for evaluation of the long term contract. At last is the conclusion.

Figure 3.1: Research Methodology Flow Chart



Source: Author

3.1 Data Collection

The data are collected from ABC shipping group, customer A and customer B and the following is how the data are collected:

(a) Historical data for inland freight among ABC, competitor 1 and competitor 2.

(b) Historical data from July 2012 to June 2014 or exported to Asia's main port.

(c)Historical data for the sea freight offer price from January to June 2014 to export to the Shanghai port among ABC, competitor 1 and competitor 2.

(d) Spot purchasing and long term contract costs to export to the Shanghai port from ocean liners.

3.1.1 Companies Documentation

This research uses the specific data from ABC customer A and customer B. This research collected the data from January to June 2014, the whole year of 2013 and July to December 2012 of export data in all Asia ports, for identifying which export ports have a big problem. The comparison will focus on every six months, because half the year of 2014 has just passed.

There are ways to transport products from Bangkok to the Shanghai port, one is from the Bangkok port and another is from Lad Krabang. Ocean liners provide the same sea freight cost from these two ports to the Shanghai port. After that the collection of the data from January to June 2014 was obtained about inland freight offer price and sea freight offer price from customer A and customer B. Customer A and customer B are the two biggest customers of ABC who exports to the Shanghai port. Also ABC has lost many businesses from these two customers. Customer A uses both ABC and competitor 1. Customer B uses both ABC and competitor 2. So the inland freight and sea freight offer prices could be compared among ABC, competitor 1 and 2. Inland freight means the from customer's factory to the port. Sea freight means from Lad Krabang or Bangkok port transport to the Shanghai port.

3.2 Data Analysis

This part shows analysis of the collection of data from order quantity dropping, after that it compared inland freight and sea freight offer prices. At last it shows spot purchasing costs and long term contract costs with ocean liners.

3.2.1 Order Quantity Dropped

The basic sea freight has two kinds of type: less than container loading (LCL) and full container loading (FCL) services. Through the collection of data from ABC, LCL services account for 10% of total revenue (Data from ABC shipping group). So LCL part is not significant for ABC shipping group. For the FCL service it accounts for 70% of the total revenue (Data from ABC shipping group). The FCL part collected data for exporting containers in the Asia area, after analyzing the data it found the problem.

Table 3.1 ABC Shipping Group Export FCL Container in Asia Area

	Jul-Dec 2012		Jan-Jun 2013		Jul-Dec 2013		Jan-Jun 2014	
Destination	20'	40'	20'	40'	20'	40'	20'	40'
Singapore	65	121	71	123	67	115	60	109
Port Klang	32	62	43	71	45	68	39	69
Hong Kong	35	42	33	38	28	33	28	33
Hochiminh	26	32	29	42	35	45	35	45
Haiphong	21	31	28	42	33	51	28	48
Tokyo, Yokohama	35	42	33	28	30	28	33	28
Osaka, Kobe	23	26	28	31	26	29	32	35
Nhava Sheva	33	35	28	22	26	27	25	22
Nagoya	16	25	15	23	18	21	25	31
Kaohsiung	77	113	72	115	83	123	78	116
Taichung	15	18	22	26	19	22	23	25
Jakarta (T300)	22	31	33	43	31	42	38	49
Keelung	32	33	23	33	27	31	32	35
Qingdao	21	26	31	22	26	28	29	33
Pusan	15	31	22	28	19	22	25	31
Doha	0	1	0	1	0	1	0	1
Um Qasar	0	1	0	1	0	1	0	1
Total:	639	983	672	952	646	875	651	830
Sub Total:	1622		1624		1521		1481	

Source : ABC Shipping Group

Table 3.1 shows that ABC exports FCL containers in the Asia area. This table shows the company exported containers in Asia area from July 2012 to June 2014. In July to December 2012 40' container exports to the Shanghai port were 313 containers, but in January to June 2014 it was reduced to 119 containers, a reduction of 57%. The Shanghai port order quantity dropped. Other ports like Singapore, Hong Kong were also reduced but the Shanghai port had the biggest problem compared with other ports.

3.2.2 Offer Price to Customer

The offer price to customers is categorized into two parts: inland freight offer price and sea freight offer price. Below is the inland freight and sea freight which is shown in the example and all data is shown in the appendices. Inland freight and sea freight has shown the offer price among ABC and competitor 1 and 2.

3.2.2.1 Inland Freight Offer Price

In this research inland freight means transportation from customer A and customer B's factory to the port. This part focused on two parts: customer A transports from the Phuttamonthon area to the Bangkok port. Customer B transports product from the King Kaew area to the Bangkok port and the Lad Krabang area.

Table 3.2: Inland Freight Offer Price between Competitor 1 and ABC Shipping Group

Phuttamonthon - BKK Port			
Competitor 1 Inland freight Offer Price		ABC Shipping Group Inland freight Offer Price	
Qty	Price(THB)	Qty	Price(THB)
2*40'	11,000	2*40'	10,500

Source : ABC Shipping Group

Table 3.3: Inland Freight Offer Price between Competitor 2 and ABC Shipping Group

Competitor 2 Inland Freight Offer Price				ABC Shipping Group Inland Freight Offer Price			
King Kaew-BKK port		King Kaew-Lad Krabang		King Kaew-BKK port		King Kaew-Lad Krabang	
Qty	Price (THB)	Qty	Price (THB)	Qty	Price (THB)	Qty	Price (THB)
1*20'	5,000	1*20' 1*40'	9,000	1* 20'	4,700	1*20' 1*40'	8,850
1* 40'	6,000	1*20'	4,000	1* 40'	5,700	1* 20'	3,850

Source : ABC Shipping Group

Table 3.1 and table 3.2 show the inland freight offer price among ABC and two competitors. Through comparing January to June of 2014 inland freight offer prices in this area, ABC inland freight offer prices were not higher than its competitors but actually lower than the two competitors.

3.2.2.2 Sea Freight Offer Price Departure from Bangkok

This part compares sea freight among ABC shipping group and competitor 1 and competitor 2. The departure port from the Bangkok port and the destination is the Shanghai port.

Table 3.4 Sea Freight Offer Price between Competitors 1 and ABC Shipping Group

Port Departure: Bangkok							
Competitor 1 Sea Freight Offer Price				ABC Shipping Group Sea Freight Offer Price			
Date	Qty	Destination	Price (USD)	Date	Qty	Destination	Price (USD)
18-Jan	1*40'	Shanghai	450	8-Jan	1*40'	Shanghai	510

Source: ABC Shipping Group

Table 3.5 Sea Freight Offer Price between Competitor 2 and ABC Shipping Group

Port Departure: Bangkok							
Competitor 2 Sea Freight Offer Price				ABC Shipping Group Sea Freight Offer Price			
Date	Qty	Destination	Price (USD)	Date	Qty	Destination	Price (USD)
10-Jan	1* 40'	Shanghai	450	15-Jan	1*40	Shanghai	510

Source: ABC Shipping Group

Table 3.4 and table 3.5 show the sea freight offer price among ABC and its two competitors. From two tables it shows ABC sea freight exports to the Shanghai port 40' container which is more expensive than competitor by 60 USD Per container, 20'container is more expensive by 30 USD per container.

3.2.2.3 Sea Freight Offer Price Departure from Lad Krabang

Customer 2 exports to the Shanghai port and uses both the Bangkok and Lad Krabang port. Customer 2 uses both ABC and Competitor 2, so ABC compares the offer price at both the Lad Krabang and Bangkok port.

Table 3.6 Sea Freight Offer Price between Competitor 2 and ABC Shipping Group

Port Departure: Lad Krabang							
Sea Freight Quotation for Competitor 2				Sea Freight Quotation for ABC Shipping Group			
Date	Qty	Port Arrive	Price (USD)	Date	Qty	Port Arrive	Price (USD)
6-Mar	1* 40'	Shanghai	450	29-Mar	1*40	Shanghai	510

Source: ABC Shipping Group

Table 3.6 shows the sea freight offer price among ABC and competitor 2. The tables show ABC's sea freight export to the Shanghai port for 40' container is more expensive than competitor 2 by 60 USD Per container, and 20'container is more expensive by 30 USD per container.

This research got inland freight offer prices and sea freight offer prices from customer A and customer B and after that compared with competitor 1 and competitor 2. From freight offer prices it shows the inland freight offer prices are not higher than the competitors. But the sea freight offer price was more expensive than competitors. The higher sea freight offer price leads the customer to a loss. ABC purchases sea freight form ocean liners, the sea freight offer cost from ocean liners can reduced the offer price so the customer can reduce the price also. From the literature it showed that using long term contracts gets a cost reduction, and currently ABC is using spot purchasing to purchasing sea freight. In the next part it will compare between spot purchasing and long term contract sea freight costs from ocean liners.

3.2.3 Sea Freight Cost

Sea freight costs mean ocean liners provide sea freight offer costs to freight forwarding companies. Ocean liners provided long term contract costs and spot purchase costs to the freight forwarding companies. The next table will compare each of them.

Table 3.7: Sea Freight Cost from Ocean Liners

Destination	Shanghai Port					
Ocean Liner	OOCL Liners		K-LINE Liners		YANGMING Liners	
Container Type	20'	40'	20'	40'	20'	40'
Spot Purchasing Cost	250	400	250	400	250	400
Long Term Contract Cost	200	300	200	300	200	300
Minimum Volume	500 Container/Year		500 Container/Year		500 Container/Year	

Source: ABC Shipping Group

Table 3.8: Volume of ABC Shipping Group Export to Shanghai Port

Destination	Period (1 year)	20'Container	40' Container	Total Container
Shanghai	Jul 2013-Jun 2014	254	307	561
	Jan-Dec 2013	294	451	745
	Jul 2012-Jun 2013	332	576	908

Source: ABC Shipping Group

Table 3.7 shows the quotation cost from three ocean liners. From this quotation it provided long term contracts where the ocean liner will offer cost to be reducing by 100USD per container for 40' containers. From table 3.5 and 3.6 it found that ABC's offer price was higher that its competitor by 60 USD per 40' container. So ABC applies a long term contract with ocean liners to reduce sea freight costs. And if sea freight costs were reduced by ABC it can provide lower offer prices to the customer.

Long term contracts make a minimum volume and deposit required. These three ocean liners provide that a minimum volume of 500 containers per year is necessary for the long term contract in one destination. This amount included 20' and 40' containers. From table 3.8 it shows that the recent data from July 2013-June 2014 where total exports to the Shanghai port are 561 containers. So ABC has the ability to make a long term contract with ocean liners.

3.3 Proposed Model

The proposed model aims at cost reduction by improving the contract model. The key measurements are the sea freight. The purchasing method of spot purchasing and long term contract has both advantages and disadvantage in the cost effectiveness. The proposed model will be suggested based on the branching point between the spot purchasing and long term contract. The proposed model and volume assumption is shown in Table 3.9

Table 3.9 Evaluating the Structure between Long Term Contract and Spot Purchasing

	Purchasing Method	Volume Assumption		
Current Model	Spot Purchasing	Volume 100%	Volume 150%	Volume 200%
Proposed Model	Long Term Contract	Volume 100%	Volume 150%	Volume 200%

Source: Author

The related literature indicates the purchasing rates are affected by the purchasing volume. Therefore, to identify the branching point between the each purchasing method, the volume assumptions are prepared as current volume. This volume means the container booking volume from the ocean liner company, the volume of 500 containers according to the ocean liner's company. According to the interview of six customers who export to the Shanghai port, there is a demand of the volume which is between 100% to 200% of the ocean liner's minimum volume. So the customer demand volume will be not less than 500 containers and will not higher than 1,000 containers. The next chapter will show if the volume is less than 100% what kind of purchasing method should be used, and if the volume is between 100% to 200% what kind of purchasing method should be used. The next chapter will show the calculation process to identify the volume assumptions.

3.4 Summary

In the freight forwarder industry, ABC faces a big problem for the customer loses in the Shanghai port. This chapter described tools and methods to improve this problem from collecting necessary data, and then analyze the data and also the proposal of the model. These would be the first step to run as a proper business because all of these processes were like preparing necessary tools before using them to further improve the problem.

CHAPTER IV

PRESENTATION AND CRITICAL DISCUSSION OF RESULTS

From the data of the collection and analysis in chapter 3, in this chapter, the evaluation of the results are presented, and it shows the result of spot purchasing and long term contract cost comparison, deposits of each ocean liner, and last it shows the implementation plan of a long term contract.

4.1 Data Alignment

The following data is collected from ABC and ocean liners

(a) Historical data exported to the Shanghai port from July 2012 to June 2014.

(b) Quotation of the long time contract cost and deposit from three ocean liners.

4.2 Spot Purchasing Cost and Long Term Contract Cost Comparison

According to the OOCL, K-LINE and YANGMING liners, the long term contract needs to be made for at least one year, so the data was compared from July 2013 to June 2014, January to December 2013, and July 2012 to June 2013. These three liners provided the same sea freight costs between Bangkok to Shanghai and Lad Krabang to Shanghai. So the long term contract made departure port from the Lad Krabang and Bangkok port to the Shanghai port. The following data compared spot purchasing and long term contract sea freight costs from the ocean liners.

Table 4.1 Spot Purchasing Sea Freight Cost for Export to Shanghai Port

Destination	Period (1 year)	20'container	40' container	Total Container	Total Cost
Shanghai	Jul 2012 -Jun 2013	332	576	908	313,400
	Jan-Dec 2013	294	451	745	253,900
	Jul 2013 -Jun 2014	254	307	561	186,300
		(250USD / Container)	(400 USD / Container)	Price Sub Total	753,600

Source: ABC Shipping Group

Table 4.2 Long Term Contract Sea Freight Cost for Export to Shanghai Port

Destination	Period (1 year)	20'container	40' container	Total Container	Total Price
Shanghai	Jul 2012 -Jun 2013	332	576	908	239,200
	Jan-Dec 2013	294	451	745	194,100
	Jul 2013 -Jun 2014	254	307	561	142,900
	Container Price	(200USD/ Container)	(300 USD/ Container)	Price Sub Total	576,200

Source: ABC Shipping Group

According to OOCL liner, K-LINE liners and YANGMING liner, the limitation volume of the long term contract is 500 container's each year per one destination, the recent data from Jul 2013-Jun 2014 of total exports to the Shanghai port was 561 containers, or around 1.12 times the minimum volume. However, for this research to have more accuracy, the researcher collected all six customer's data who export to the Shanghai port and found that the demand of the six customer exports will not be less than 500 container's and not higher than 1,000 containers. From the historical January to December 2013 data, exports were 745 containers or 1.5 times the limitation

volume, from July 2012 to June 2013 exports were 908 containers or 1.8 times the limitation volume. So the historical data is 112%, 150% and 180%. And the volume assumptions according to the six customer's demand were between 100% to 200%, so the historical is also in the scope. It's suitable for applying the long term contract. Use the recent data July 2013 to June 2014 compare with spot purchasing long term contract could saving 43,400 U.S Dollar's.

4.3 Comparison the Deposit of Each Ocean Liners

Ocean liners provided deposits which means ABC must reach a minimum volume of 500 containers per year, otherwise the ocean liner will cut the deposit from ABC. The following table shows three ocean liners who provided the deposit.

Table 4.3 Deposit of Each Ocean Liner Company

Destination	Shanghai Port					
Ocean Liner	OOCL Liners		K-LINE Liners		YANGMING Liners	
Deposit (THB)	790,000		850,000		900,000	
Minimum volume	500 Container/Year		500 Container/Year		500 Container/Year	
Container type	20'	40'	20'	40'	20'	40'
Spot purchase cost	250	400	250	400	250	400
Long term contract cost	200	300	200	300	200	300

Source: ABC Shipping Group

Table 4.3 shows that from July 2013 to June 2014 ABC exported 562 container's to the Shanghai port which is 1.12 times higher than the ocean liner minimum volume. So ABC is possible to change from spot purchasing to a long term contract. Through comparing the liner's deposits it found that the OOCL liner required less of a deposit compared with K-line and Yang Ming Liners. So, ABC will choose the OOCL liner as the corporation liner to make a long term contract with.

After that, using the recent data from July 2013-June 2014 it compared the long term contract cost and spot purchasing cost, and found that the long term contract cost

could save 43,400 U.S Dollar's according the August 6th 2014 exchange rate of 1 USD exchanged for 31.78 THB. So 43,400 Dollars exchanged into 1,379,252 Baht. And the OOCL liner needed a790,000 Baht deposit. So, this part of the savings is enough to pay for the deposit. After finishing a one year contact the deposit also could be refunded. Because the cost is reduced, the offer price to customers is also reduced. For a 20' container the price could be reduced by 50 USD per container, and for a 40'container the price could be reduced by 100 USD per container. The offer price to customers will be 410 USD per 40' container, 230 USD per 20' container; this price is cheaper than competitors for a 40' container by 450 USD, for a 20' container by 250 USD. ABC's offer price can provide customers with a more competitive price. So it will fix the customer reduction problem. Also it can attract new customers because of the new competitive offer price.

4.4 Implementation Plan of Long Term Contract

ABC has four related departments with contract conversion between spot purchasing and a long term contract.

a) Purchasing Department: To make a decision of the purchasing method and to forecast the amount of container exports.

b) Accounting Department: To prepare the deposit and to do the payment to the liners and other suppliers.

c) Export Department: To communicate and make booking the container with the liners, which consists of office staff to communicate with liners, key in the information to internal system and customs clearance staff.

d) Sales Department: To increase the revenue and volume of containers through the sales activity to both of the brand new customers and the existing customers.

Implementation of long term contracts affects ABC in terms of contract objective and operational objective. ABC should be planning to implement the long term contract by objective base under the cooperation between the four departments.

4.4.1 Contract Objective

The contract objective is carried out by the purchasing department and the accounting department. In addition to the 'Negotiation of sea freight', there are three additional steps, i.e., 'Forecasting of Container Volume', 'Defining of Contract Period', and 'Deposit Preparation' which are the important steps to make contracts with ocean liners.

a) Forecasting of Container Volume: 'Forecasting of container volume' should be done by the purchasing department using the historical data of past operations and forecasting data from the sales department. The forecasting should be done before the negotiation cost of the sea freight with the ocean liners to obtain the best conditions.

b) Negotiation of Sea Freight: 'Negotiation of sea freight' should be done by the purchasing department. Needless to say, this is the most important part in the conversion of a contract. The comparison of several ocean liner sea freight costs must be done and should be negotiated until obtaining the competitive rate and deposit amount.

c) Defining of Contract Period: 'Defining of contract period' should be done by the purchasing department. Generally speaking, spot purchasing has no contract period and long term contracts have a period of one year. However, the contract period of long term contracts should be defined by referring to the market situation and sales activity. Furthermore, the contract period affects payments of sea freight to ocean liners following the contract period. Therefore, the accounting department needs to change the payment period to ocean liners flowing to the definition of the contract period.

d) Deposit Preparation: 'Deposit Preparation' should be done by the accounting department. Long term contracts require deposits to liners. And the deposit should be prepared before signing the contract by the optimized method of financing arrangement considering the contract period.

After processing the above mentioned steps, ABC should make a contract with the liner and prepare for the operational objective in the next step.

4.4.2 Operational objective

Though the affection of operation is limited more than contract objective, the export department and sales department should do the following activities to carry out the operations in a long term contract.

e) Export Operation: 'Export Operation' should be done by the export department. There is no affection to the customer and customs clearance because the selling rate to customers is not changed and the export declaration is done by free on board (FOB) price that does not include the sea freight to the export declaration sheet. However, the export department needs to pay attention to the keys in the sea freight cost to its own internal system that is connected with the accounting system. It is quite a basic activity that the key is the correct cost to the system, nevertheless the changing cost structure should be controlled and paid keen attention to when carried out.

f) Sales Activity: 'Sales Activity' should be done by the sales department. Firstly, the objective of sales activity is increasing the revenue. And in terms of contract perspectives, ABC must obtain the volume to exceed the minimum volume order to avoid the deduction of the deposit. The characteristics of sales activity are increasing the revenue and maintain the minimum volume order. Therefore, another objective of sales activity requires offering campaign prices for potential customers, offering special prices for approaching customer, etc.

4.5 Summary

The results show that using the long term contract could reduce the sea freight costs for exporting to the Shanghai port. But there is also a minimum volume from the ocean liners, and after comparing the data ABC can be achieve this volume so it could apply for the long term contract method to fix the problem of higher sea freight prices when exporting to the Shanghai port. At last it has shown the implementation plan of the long term contract to prepare a contract and the operational objective.

CHAPTER V

SUMMARY FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the conclusions and summary of the findings, theoretical implications, managerial implications and lastly the limitations and recommendations for future research.

5.1 Conclusions and Summary of the Findings

This research applied two purchasing methods for historical data of the company ABC. The results indicated that even though two purchasing methods spot purchasing and long term contract, both pros and cons the long term contract had an advantage in the cost perspective in the case of the company.

The answer of the key-question, "How can long term contracts reduce sea freight costs?" is "The long term contract could reduce the sea freight cost". In case the company can clear the limitation of minimum purchasing volume and prepare the deposit, the long term contract has a positive effect on the freight forwarding company.

This study found the long term contract requires a deposit from liners and it causes another cost such as financing and controlling the end of the period in the accounting field. And the three liners offered same sea freight rate in the long term contract price. But they provided different deposit amounts for making a long term contract. After that, for cost savings ABC choose OOCL liner to make a long term contract with because the OOCL liner provides the lowest deposit compared with the other two ocean liners.

5.2 Theoretical Implications

This study used long term contact purchasing with the ocean liners to reduce the sea freight costs. According Monczka, et al. (2011) making a long term contract has a lot of advantages. Through the pervious study Christopher (2008), Robert and Serguei (2009), Scott (2013) long term contracts could bring more benefits to the company. So, ABC applied the long term contract purchasing method to reduce the cost of sea freight. The results showed that use of long term contracts can reduce the sea freight cost, after applying long term contracts it could give a lower offer price to customers.

5.3 Managerial Implications

The application of appropriate purchasing methods reduces the cost of freight forwarding companies and at the same time, the long term contract enforces limitations and deposits. The management of the company should pay attention to these limitations and deposit preparation with other departments in the company. The collaboration between the purchasing department and sales department, the purchasing department and accounting department is required.

In the collaboration between the purchasing department and sales department, the sales department should try to promote the existing customers and obtain the brand new customer in order to maintain the required minimum volume from liners. The combination of sales strategy both for existing customers and brand new customers has a synergetic effect in promoting the revenue and decreasing the cost. Once the sales department increases the volume from existing customers and obtains the brand new customers, this means the purchasing department has the bargaining power to the liners to decrease the sea freight and improve the conditions about the deposit and limitations.

In the collaboration between the purchasing department and accounting department, the purchasing department needs to explain the differences of contracts between the spot purchase and long term contracts and let the accounting department understand how to prepare the deposit for the contracts. This is quite basic activity in the

company, but the failure of the implementation of changing purchasing methods can affect customer's operation easily. And it should result in lost business for the company. Therefore internal processes in the company should be processed in for mutual understanding with the back office section. The accounting department should try to manage and optimize how to prepare the money for the deposit. The deposit should increase once business increases more than the current situation.

This research focused on reducing costs of the sea freight by using the historical data of ABC. ABC can use the results and findings to their operations for enhancing the company's cost structure. Management of ABC should pay attention to maintaining the volume and implementing spot purchasing to the company and must promote the total handling volume in order to obtain the better conditions from the liners.

The competition in the logistics industry is increasing day by day and the company who cannot improve the cost structure faces the crisis of bankruptcy. To dominate higher volume in the industry and defeat the competitor, ABC should start to purchase sea freight by the long term contract.

5.4 Limitations and Recommendations for Future Research

In this research, the destination is limited to the Shanghai Port. The long term contract is applicable for another destination and combining the total volume of another destination fosters the advantageous situation for ABC to negotiate with the liners.

The researcher should combine the different destination volumes and try to examine the pros and cons of the long term contract. This research used the Shanghai port to make a long term contract with the ocean liners and later will try making a long term contract with all destinations to reduce the sea freight cost. And the offer price to customer is more competitive.

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APPENDICES 1

Compare inland freight quotation and sea freight quotation with competitor 1 and competitor 2 from January to June 2014.

Inland Freight Offer Price between Competitor 1 and ABC Shipping Group

Phuttamonthon- Bangkok Port			
Inland Freight for Competitor 1		Inland Freight for ABC Shipping Group	
Qty	Price(THB)	Qty	Price(THB)
2*40'	11,000	2*40'	10,500
2*40'	11,000	1*40'	5,250
1*40'	5,500	1*40'	5,250
1*40'	5,500	2*40'	10,500
1*40'	5,500	2*40'	10,500
2*40'	11,000	1*40'	5,250
1*40'	5,500	2*40'	10,500
2*40'	11,000	1*40'	5,250
1*40'	5,500	2*40'	10,500
2*40'	11,000	1*40'	5,250
1*40'	5,500	1*40'	5,250
1*40'	5,500	2*40'	10,500
2*40'	11,000	2*40'	10,500
2*40'	11,000	1*40'	5,250
1*40'	5,500	2*40'	10,500
1*40'	5,500	1*40'	5,250
1*40'	5,500	1*40'	5,250
2*40'	11,000	2*40'	10,500
1*40'	5,500	1*40'	5,250
2*40'	11,000	1*40'	5,250
1*40'	5,500	2*40'	10,510
2*40'	11,000	1*40'	5,250
1*40'	5,500	2*40'	10,500
1*40'	5,500	1*40'	5,250
2*40'	11,000	1*40'	5,250
1*40'	5,500	2*40'	10,500
2*40'	11,000	1*40'	5,250
2*40'	11,000	3*40'	17,250
1*40'	5,500	2*40'	10,500

APPENDICES 2: Inland Freight Offer Price between Competitor 2 and ABC

King Kaew-BKK Port		King Kaew-Lad Krabang		King Kaew-BKK Port		King Kaew-Lad Krabang	
Competitor 2 Inland Freight				ABC Shipping Inland Freight			
Qty	Price (THB)	Qty	Price (THB)	Qty	Price (THB)	Qty	Price (THB)
1*20', 1*40'	11,000	1*20', 1*40'	9,200	1* 20'	4,700	1*20', 1*40'	8,850
1* 20'	5,000	1*20'	4,000	1* 40'	5,700	1* 20'	3,850
1* 40'	6,000	1*20', 1*40'	9,000	1*20', 1*40'	10,400	1*20', 1*40'	8,850
1*20', 1*40'	11,000	1* 40'	5,200	1*20', 1*40'	10,400	1* 40'	5,000
1* 20'	5,000	1*20', 1*40'	9,200	1* 20'	4,700	1*20', 1*40'	8,850
1* 40'	6,000	1* 20'	4,000	1* 40'	5,700	1* 20'	3,850
1*20', 1*40'	11,000	1*20', 1*40'	9,200	1*20', 1*40'	10,400	1*20', 1*40'	8,850
1* 20'	5,000	1* 40'	5,200	1*20', 1*40'	10,400	1* 40'	5,000
1*20', 1*40'	11,000	1*20	4,000	1* 20'	4,700	1*20'	3,850
1* 20'	5,000	1*20', 1*40'	9,200	1* 40'	5,700	1*20', 1*40'	8,850
1* 40'	6,000	1* 20'	4,000	1*20', 1*40'	10,400	1* 20'	3,850
1*20', 1*40'	11,000	1*20', 1*40'	9,200	1*20	4,700	1*20', 1*40'	8,850
1* 20'	5,000	1*40'	5,200	1*20', 1*40'	11,000	1* 40'	5,000
1* 40'	6,000	1*20', 1*40'	9,200	1* 20'	4,700	1*20', 1*40'	8,850
1*20', 1*40'	11,000	1* 20'	4,000	1* 40'	5,000	1* 20'	3,850
1* 20'	5,000	1*20', 1*40'	9,200	1*20', 1*40'	10,400	1*20', 1*40'	8,850
1*40'	6,000	1* 40'	5,200	1*20', 1*40'	10,400	1* 40'	5,000
1*20', 1*40'	11,000	1*20', 1*40'	9,200	1* 20'	4,700	1*20'	3,850
1* 20'	5,000	1* 20'	4,000	1* 40'	5,700	1*20', 1*40'	8,850

APPENDICES 3: Sea Freight Office Price between Competitor 1 and ABC Shipping Group

Sea Freight for use Competitor 1				Sea Freight for use ABC Shipping Group			
Port Departure: Bangkok							
Date	Qty	Destination	Price (USD)	Date	Qty	Destination	Price (USD)
18-Jan	1*40'	Shanghai	450	7-Jan	2*40'	Shanghai	1020
21-Jan	1*40'	Shanghai	450	8-Jan	1*40'	Shanghai	510
23-Jan	1*40'	Shanghai	450	11-Jan	2*40'	Shanghai	1020
24-Jan	2*40'	Shanghai	900	14-Jan	1*40'	Shanghai	510
25-Jan	1*40'	Shanghai	450	16-Jan	1*40'	Shanghai	510
30-Jan	1*40'	Shanghai	450	6-Feb	1*40'	Shanghai	510
4-Feb	1*40'	Shanghai	450	13-Feb	1*40'	Shanghai	510
5-Feb	1*40'	Shanghai	450	14-Feb	1*40'	Shanghai	510
18-Feb	2*40'	Shanghai	900	1-Mar	1*40'	Shanghai	510
19-Feb	1*40'	Shanghai	510	4-Mar	1*40'	Shanghai	510
20-Feb	2*40'	Shanghai	1,020	5-Mar	1*40'	Shanghai	510
25-Feb	1*40'	Shanghai	510	6-Mar	2*40'	Shanghai	1,020
28-Feb	1*40'	Shanghai	510	8-Mar	2*40'	Shanghai	1,020
14-Mar	2*40'	Shanghai	1,020	13-Mar	2*40'	Shanghai	1,020
18-Mar	2*40'	Shanghai	900	4-Apr	1*40'	Shanghai	510
19-Mar	2*40'	Shanghai	900	14-May	2*40'	Shanghai	1020
20-Mar	1*40'	Shanghai	450	15-May	2*40'	Shanghai	1020
25-Mar	1*40'	Shanghai	450	16-May	1*40'	Shanghai	510
28-Mar	1*40'	Shanghai	450	17-May	1*40'	Shanghai	510
29-Mar	2*40'	Shanghai	900	3-Jun	2*40'	Shanghai	1,020
2-Apr	2*40'	Shanghai	900	6-Jun	1*40'	Shanghai	510
3-Apr	1*40'	Shanghai	450				
11-Apr	1*40'	Shanghai	450				
19-Apr	1*40'	Shanghai	450				
24-Apr	2*40'	Shanghai	900				
25-Apr	1*40'	Shanghai	450				
20-May	2*40'	Shanghai	900				
23-May	1*40'	Shanghai	450				
24-May	2*40'	Shanghai	900				
28-May	1*40'	Shanghai	450				

APPENDICES 4: Sea Freight Office Price between Competitor 2 and ABC Shipping Group

Sea Freight Office Price for Competitor 2							
Port Departure: Bangkok				Port Departure: Lad Krabang			
Date	Qty	Destination	Price (USD)	Date	Qty	Destination	Price (USD)
7-Jan	1* 20'	Shanghai	250	16-Jan	1*20'	Shanghai	250
10-Jan	1* 40'	Shanghai	450	23-Jan	1*20',1*40	Shanghai	700
14-Jan	1*20',1*40'	Shanghai	700	30-Jan	1* 40'	Shanghai	450
21-Jan	1* 20'	Shanghai	250	4-Feb	1*20',1*40'	Shanghai	790
28-Jan	1*20',1*40'	Shanghai	700	7-Feb	1*20',1*40'	Shanghai	790
31-Jan	1* 20'	Shanghai	250	11-Feb	2* 40'	Shanghai	790
4-Feb	1*20',1*40'	Shanghai	790	13-Feb	1*20	Shanghai	280
14-Feb	1*20',1*40'	Shanghai	790	20-Feb	1*20',1*40'	Shanghai	790
18-Feb	1* 20'	Shanghai	280	21-Feb	1*40'	Shanghai	510
21-Feb	1* 40'	Shanghai	510	25-Feb	1*20',1*40'	Shanghai	790
25-Feb	1*20',1*40'	Shanghai	790	27-Feb	1* 20'	Shanghai	250
4-Mar	1*40'	Shanghai	450	6-Mar	1* 40'	Shanghai	450
7-Mar	1*20',1*40'	Shanghai	700	13-Mar	1*20',1*40'	Shanghai	700
11-Mar	1* 20'	Shanghai	250	20-Mar	1* 20'	Shanghai	250
21-Mar	1* 20'	Shanghai	250	10-Apr	1* 20'	Shanghai	250
25-Mar	1* 40'	Shanghai	450	17-Apr	1* 40'	Shanghai	450
28-Mar	1*20',1*40'	Shanghai	700	24-Apr	1*20',1*40	Shanghai	700
1-Apr	1* 20'	Shanghai	250	1-May	1* 20'	Shanghai	250
8-Apr	1*20',1*40'	Shanghai	700	15-May	1* 20'	Shanghai	250
9-Apr	1* 20'	Shanghai	250	22-May	1*20',1*40'	Shanghai	700
10-Apr	1* 40'	Shanghai	450	29-May	1* 40'	Shanghai	450
25-Apr	1* 40'	Shanghai	450	19-Jun	1*20',1*40'	Shanghai	700
29-Apr	1*20',1*40'	Shanghai	700	26-Jun	1* 40'	Shanghai	450
6-May	1*20',1*40'	Shanghai	700				

APPENDICES 4: Sea Freight Office Price for Competitor 2 and ABC Shipping Group (continued)

Sea Freight Offer Price for ABC Shipping Group							
Port Departure: Bangkok				Port Departure: Lad Krabang			
Date	Qty	Destination	Price (USD)	Date	Qty	Destination	Price (USD)
15-Jan	1* 40'	Shanghai	510	4-Jan	1*20',1*40	Shanghai	790
22-Jan	1*20',1*40'	Shanghai	790	18-Jan	1*20',1*40'	Shanghai	790
5-Feb	1* 20'	Shanghai	280	8-Feb	1* 20'	Shanghai	280
5-Mar	1* 20'	Shanghai	280	15-Feb	1*20',1*40	Shanghai	790
12-Mar	1* 40'	Shanghai	510	22-Feb	1* 40'	Shanghai	510
19-Mar	1*20',1*40'	Shanghai	790	1-Mar	1*20'	Shanghai	280
2-Apr	1*20',1*40'	Shanghai	790	8-Mar	1*20',1*40'	Shanghai	790
30-Apr	1*20',1*40'	Shanghai	790	15-Mar	1* 20'	Shanghai	280
7-May	1* 20'	Shanghai	280	29-Mar	1* 40'	Shanghai	510
14-May	1* 40'	Shanghai	510	26-Apr	1* 40'	Shanghai	510
28-May	1*20',1*40'	Shanghai	790	3-May	1*20'	Shanghai	280
18-Jun	1*20',1*40'	Shanghai	790	10-May	1*20',1*40'	Shanghai	790
25-Jun	1*20'	Shanghai	280	17-May	1* 40'	Shanghai	510
				24-May	1*20',1*40'	Shanghai	790
				7-Jun	1*20',1*40'	Shanghai	790
				28-Jun	1* 40'	Shanghai	510