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**A STUDY OF VALUE CREATION THROUGH THE USE OF  
3PL AND 4PL PARTNERS WITHIN THE WHITE GOODS  
MANUFACTURING INDUSTRY OF CHINA'S DOMESTIC  
MARKET**

A thesis presented in partial fulfillment of the requirements for the  
degree of Master in Logistics and Supply Chain Management

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## **ABSTRACT**

**Purpose** – Over recent years many businesses have recognised that there are strong competitive advantages in adopting outsourcing of logistics functions to logistics providers worldwide. The aim of this research is to understand how Chinese white goods manufacturers utilise contract logistics to increase their profitability and customer service level.

**Design/methodology/approach** – An interview-based approach was utilized to collect data from three of the leading Chinese domestic white goods manufacturers in mainland of China in 2011. Within-case study and cross-case study were the data analysis methods used in this study.

**Findings** – Logistics Service Providers (LSP's) do significantly and directly increase Chinese white goods manufacturers' logistics performance efficiency and effectiveness, and in turn, increase their profitability, and indirectly increase customer service levels.

**Research limitations/implications** – Findings are based on senior managers' personal understandings and responses from three selected manufacturers, therefore personal biases and references could have possibly occurred. Due to time and financial limitations, only three manufacturers were selected from the many possible industry providers, so care needs to be taken not to assume that findings will always be completely representative of the industry.

**Practical implications** – Competition in the field of white goods manufacturing has become more intense than ever before. Chinese white goods manufacturers need to spend all its resources on its core businesses, in order to increase competitiveness, and leave non-core business functions to outside contractors such as outsourcing logistics functions to a third party logistics (3PL) provider.

**Key words** – LSP, 3PL, China, white goods manufacturers.

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# **CHAPTER ONE: INTRODUCTION**

## **1.1. INTRODUCTION**

The aim of this study is to understand the ways in which China's white goods manufacturers currently increase and enhance their value creation, customer satisfaction, and competitiveness through utilisation of third party logistics (3PL) and or fourth party logistics (4PL) service providers within the scope of domestic distribution.

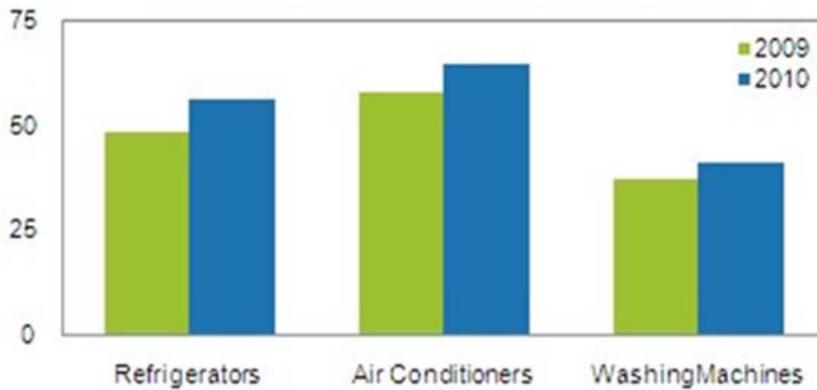
As an introductory chapter, this will start with an explanation of the current state of China's white goods manufacturing industry and a broad picture of the current logistics practices, especially the 3PL aspect, in order to give readers a brief idea of the information relevant to this paper. Additionally, the outline and the objectives of this paper will be presented.

## **1.2. CURRENT STATUS OF CHINA'S WHITE GOODS**

### **MANUFACTURING INDUSTRY**

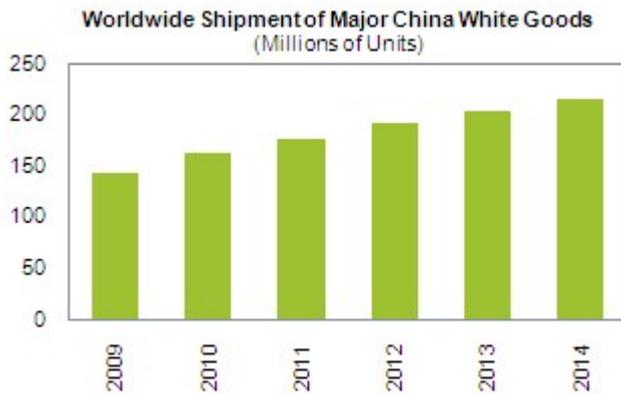
China has remained one of the fastest-growing economic entities in the world since late 1980s, a fact which has attracted investors from all over the world for opportunities to reach the growing wallets of Chinese consumers. According to Chi, Kaneda, Orr & Salsperg (2009) more recently, the impact of the global economic crisis of 2008 on China has been quite moderate compared with that on other major business entities. With domestic consumption in China being strong the domestic retail sales have grown at a rate of approximately 15%. This has been reflected in the white goods industry, in which the consumption of its major items such as refrigerators, air conditioners, and washing machines has been increasing steadily

from 2009 to 2010, as shown in Figure 1.1. Even though its growth rate has been fast, domestic consumption still only represents 35% of the total GDP in China compared to 70% in the US. Thus, there is still much room for China's domestic consumption rate to grow. White goods consumption figures continue to look very promising in the next few years, as indicated by Figures 1.1 and 1.2.



**Figure 1.1: China white goods shipment (millions of units)**

(Source: Kong, 2010a)



**Figure 1.2 Worldwide shipment of major China white goods (millions of units)**

(Source: Kong, 2010b)

On the other hand, China is an extremely competitive market, and the white goods industry is probably the toughest, because the competition is fierce. There are many domestic and foreign brands fighting for pieces of the biggest commercial cake in the world. Profit margins are tight, and even the available market is shrinking in

the first- and second-tier cities. In the terms of production, China is the world's largest manufacturer in this industry, and has over 50% of its production for overseas markets. Due to the impact of the world economic crisis of 2008, the white goods exporting sector has been slowing down substantially ever since (University of Cambridge, 2008). Last but not least, China's white goods manufacturers have suffered from increasing raw material and labour costs. In February 2008, Chinese steel makers agreed to spend a massive 65% more on the iron ore process, and the price of steel increased by 100 RMB per ton from 13<sup>th</sup> to the 21<sup>st</sup> of February in 2008. As a domino effect, the production costs of white goods also increased (China Economic Net, 2008).

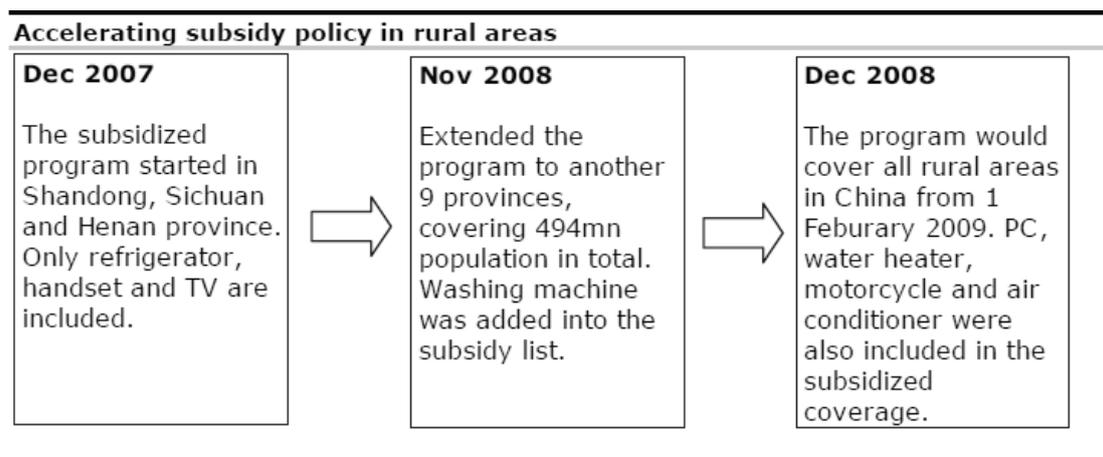
The challenges in white goods manufacturing industry are firstly, cope with the shrinking of the available market, tightening of profit margins, and weakening of exports, and, secondly, to protect both domestic and international white goods manufacturers from fading away in the Chinese market, and, thirdly, to stimulate domestic consumption, which is the currently the third most important economic growth driver behind exporting and FDI (Foreign Direct Investment), and will be the most important in the future to China's economic growth (World Scientific, 2011). The Chinese Central Government has adopted two subsidy policies to bail out the entire white goods industry, as explained below:

#### **(1) Home Appliances for the Countryside**

Also known as the rural rebate scheme which is a 4 year plan started in February 2009 (**Figure 1.3**). This scheme aims to stimulate the demand for white goods among China's rural consumers, who will receive subsidies of up to 13% of the tag price. Currently, this program includes refrigerators, washing machines, water heaters, air conditioners, TV sets, PCs, and handsets, and other items might be added in the future. Domestic manufacturers have been heavily benefiting from this program; over 90% of the qualified suppliers are Chinese brands, qualifying due to their comprehensive

production lines, sales networks, and so on. Moreover, the profit margin of rural trades is higher than that in urban areas due to lower selling expenses (Tang, 2009).

By February 2010, sales of white goods products to the countryside through this program had reached 37.7 million units worth a total of 69.3 billion RMB, which is equivalent to more than 10 billion US dollars (Wong, 2010).



**Figure 1.3 Accelerating subsidy policy in rural areas** (Source: Tang, 2009, p.2)

## (2) The Old for New Subsidy Program

According to Kong (2010b), the old for New Subsidy Program started in June 2009, aimed at spurring on urban consumers, and offers subsidies of up to 10% for urban consumers who sell their old white goods items in order to purchase new ones by February 2010. Sales through this program reached 23.2 billion RMB, equivalent to 3.4 billion US dollars.

All in all, though profit margins may be tight due to the increase of raw materials and labour costs and intense competition, the volume sales are surging ahead as observers forecasted due to state macroeconomic control, the manufacturers of white goods continue to have opportunities to make profit, especially from the newly explored markets of rural areas and third and fourth tier cities. In addition, despite the toughness of the market, opportunities still lie in the development of new products to

cater for China's emergent customer groups, not only for rich families, but also for first time consumers from different regions and across a wide range of lifestyles, each with its own product and service desires, making the market environment more diverse than ever before. Yet these new opportunities have also brought new challenges to Chinese white goods manufacturers, for example, that of how to deliver their products to the newly explored markets, especially rural areas, in time to fulfill customers' expectations.

### **1.3. BACKGROUND OF CHINA'S LOGISTICS INDUSTRY**

Before the 1980s, China was under a centrally planned economic system. Both production and distribution were controlled solely by the various levels of the government plans, and any private supply and distribution activities were treated as illegal and anti-communist. As a result, there was a constant shortage of supply, and enterprises had to hold as much inventory as they could to protect themselves against the risk of running out of stock. Unfortunately, the notion of inventory costs was then unknown to most of the decision makers and, indeed, others too.

According to the investigation of Jiang & Prater (2002), the whole of China's distribution and logistics system was made up of three rigid and vertical tiers: 1<sup>st</sup> tier distributors, who were located in the major cities, such as Beijing, Shanghai, Guangzhou, and so on, 2<sup>nd</sup> tier wholesalers, located in the big provincial capital cities, and 3<sup>rd</sup> tier wholesalers, located in smaller cities and towns. State owned distributors and transporters shipped each industry's products from the major cities to the big cities and then to the smaller cities or towns. However, the state owned distributors only provided basic transportation and warehousing rather than any marketing and related support. All in all, "this huge system was formed in the socialist mode, which is based on resource allocation rather than market demand (p.784)". On the other hand, taking China's size and geography into consideration,

only the state had the resources to operate this huge nationwide logistics system, and up until now, many domestic and foreign businesses still rely on it due to its extensive nationwide network. From the mid-1980s, China has been opening her door to the rest of the world, and gradually transforming its central planning system to a market economic one, which directly pushed the traditional logistic system towards being more market oriented, and caused more and more private logistics service providers to emerge in the market. Although the services they provided were not as sophisticated as those of today's big international logistics corporations, they formed the foundation of today's Chinese logistics industries, and most big logistics companies today come from those original small private logistics service providers.

In the big picture, reforming policy has attracted more than 80% of the Fortune 500 companies to invest in China to share in the market with the most potential. In addition, with its lower-cost labour force and certain related supportive state policies, China has become the world's manufacturing centre, directly leading to the fast growth of China's logistics industry. The average annual growth rate of China's logistics industry from 1992 to 2004 was 22.2%, and logistics expenditures accounted for an average of 21.8% of its GDP during this period (Wang, Lai & Zhao, 2008). After having officially joined the World Trade Organisation in 2001, China's logistics industry was set up to grow even faster (Tian, Lai & Daniel, 2008).

#### **1.4. RESEARCH PROBLEM GENERATION**

So far, the Chinese 3PL industry has drawn a few scholars' attention and has been investigated from various perspectives. Jiang et al., (2002) carried out a systematic review of China's traditional logistics and distribution system under the planned economic system prior to the opening policy, and analysed its modern logistics industry post-opening policy. They pointed out the three major driving forces that have been pushing China's logistics industry forwards, namely, the economic

boom, the entrance into the WTO, and the rapid development of ecommerce.

Lau & Zhang (2006) investigated the major drivers of and obstacles to business outsourcing practices in China, comparing them with those in developed Western countries. They found that the key drivers are (1) economic factors, which are the main concern, such as cost reduction, capital investment reduction, etc, (2) strategic considerations, such as the strategies of focusing resources on a core competence, increasing flexibility, etc, and (3) environmental factors, such as 3PL service providers' IT (information technology) capacity seriously influencing businesses' willingness to outsource, etc. The key barriers include lack of qualified 3PL providers, poor transportation and IT infrastructure, and local protection regulations.

Wang et al., (2008) conducted empirical research on the impact of IT on the financial performance of 3PL logistics firms in China, and found that both advanced IT, with sufficient managerial and resource support, and IT executives should be aligned with business strategy to significantly improve these firms' financial performance.

The papers mentioned above have set out a sound understanding of China's logistics industry, especially the 3PL industry, from various perspectives, however, as far as the writer knows, none of them have reported any study on the usage of 3PL by China's white goods industry. From the writer's personal observation and understanding, though China's 3PL industry is still at the take-off stage, while it can still be utilised by China's white goods manufacturers as a sharp weapon to reduce business operation costs and, at the same time, increase customer satisfaction with service. Therefore, the major objective of this research was to explore what assistance 3PL providers give to China's white goods manufacturers in the area of logistics performance and how this does or does not provide advantage.

## **1.5 THESIS OUTLINE**

This thesis is made up of six chapters.

The first chapter introduces the background and major objectives and motivation for this research.

The second chapter presents a detailed literature review of logistics and 3PL, which comprises the conceptual backbone for the entire thesis, and explains, from the theoretical perspective, how businesses can improve their competitiveness, be environmentally friendly, increase customer satisfaction, reduce costs, etc. through performing better logistically and utilising 3PL services well.

In chapter three the research methodology that was adopted is discussed alone with an explanation as to why it is most suitable for this research while also highlighting the ethical issues that researchers have to bear in mind during the whole research process.

The fourth chapter examines and studies three of China's leading white goods manufacturers in terms of their logistical performance, 3PL utilization, and related information, and results of the study will be summarised for discussion in chapter 5.

The fifth chapter will take the study and interview results as comparison and discussion material to find out the differences and similarities in the logistics strategies that the three businesses have adopted, and identify which might be more pioneering than the rest and why.

Finally, chapter six reviews the research objective and provides an overall conclusion, pointing out the limitations of the research, and some constructive suggestions for future studies.

# **CHAPTER TWO: LITERATURE REVIEW**

## **2.1. INTRODUCTION**

From an academic perspective, logistics is still a new discipline compared to those of marketing, accounting, HR, etc, however, it draws much attention from academia, and a great many studies have been contributing to its development. In this chapter, a thorough literature review will be carried out, covering the origin of the notion of logistics, the different stages of logistics development, and how logistics can act as an offensive weapon for businesses for gaining differentiation, cost-competitive advantage, or a combination of both.

In addition, third party logistics (3PL) providers, which are the most direct logistics providers, will be discussed from a wide-ranging perspective, directed towards, for example, obstacles and drivers of 3PL adoption and ingredients required for a successful 3PL operation. Furthermore, 4PL will be introduced in this chapter, as it is a further development of 3PL.

Then, an understanding of the current position of China's logistics outsourcing industry will be built up which accounts for both challenges and opportunities that it is facing.

## **2.2. BUSINESS LOGISTICS**

### **2.2.1 History of logistics**

Business logistics is relatively new as an area of study recognised by academics in comparison with other more traditional fields, such as those of economics, marketing, and accounting; the first coordinated logistics management textbook came out as recently as 1961 (Ballou, 1998). However, the notion of systematic logistic thinking had been adopted by civilians long before that. According to Lambert,

Stock & Ellram (1998), logistics activities have existed for literally thousands of years, tracing back to the earliest forms of organised trade.

Ballou (1998) claimed that, though the concept that logistics adds value to essential products or services was not generally practiced until recently, the idea of coordinated management can be traced back to 1844 at least. In the writing of Jules Dupuit, a French engineer, the idea of trading one cost for another, as in the case of trading transportation costs for inventory costs, was evident in the choice between road and water transport.

In these authoritative explanations by mainstream dictionaries, it is not hard to recognise that logistics does have a very strong military background. Indeed, there are some instances of warfare that proved the importance of logistics. Firstly, the contribution of logistics towards the Allied victory in World War II began to give logistics increased recognition and emphasis. In the North African desert, German field general Erwin Rommel lost to Lieutenant General Bernard Montgomery of the Allied Forces. Though Rommel in fact excelled at making quick, unexpected thrusts, he and his troops nevertheless lost due to constantly outrunning supplies, while, conversely, his enemy, Britain's Eighth Army, had a sound logistics system which made sure that all necessary supplies were there on time. More recently, in the 1<sup>st</sup> Persian Gulf War in 1990-1991, which was also in a desert environment, effective and efficient supplying was also one of the key factors in the success of the U.S Army. As Sharman (1991) said, "*in the military, the 'cost' of poor logistics performance is increased loss of life or, at best, poor troop morale*" (p.36). He also believed that logistics has major implications for business, the cost of poor logistics in business being loss of sales rather than lives.

As early as Shaw (1912) mentioned the critical relations between the activities of demand and supply, and even realised that failure to co-ordinate any activities with

others in its group is certain to upset the efficiency of distribution.

In A Division of Merriam-Webster, Incorporated. (2002), logistics had been defined as *“the aspect of military science dealing with the procurement, maintenance, and transportation of military material, facilities, and personnel”* (p.1079).

Similarly Pearsall & Trumble (2002) defined logistics as *“The organization of moving, lodging, and supplying troops and equipment”* (p.844).

Alongside this, logistics was actually heavily used in military activities, as The English Dictionary (2011) shows the definition of logistics: *“That branch of the military art which embraces the details of moving and supplying armies”*.

## **2.2.2 Definition of logistics management**

In the latter half of the 20<sup>th</sup> century, logistics activities have evolved from being carried out from an almost exclusively military perspective to involve all types of organizations, such as manufacturing operations, governments, hospitals and service sectors. It has begun to affect almost every sphere of human activity, directly or indirectly, and has been given various names. Stock & Lambert (2001) indicated that there are several terms for modern logistics activities, such as business logistics, channel management, distribution, industrial logistics, material management, supply chain management, and physical distribution, however, the most commonly accepted term by logisticians is “logistic management”.

A number of definitions and explanations of logistics management have been offered by different logistics scholars and associations from different perspectives over time. Though they differ slightly, each is an attempt to provide a good idea of it. Some are listed and analysed here:

Waters (2002) summarised the meaning of logistics as “*the function responsible for the flow of materials from suppliers into an organization, through operations within the organization, and then out to customers*” (p.5). According to Coyle, Bardi & Langley (2003), there are four types of economic utility affected by logistics, which are form, time, place, and possession. Generally, academics credit manufacturing activities with providing form utility, logistics activities with time and place utilities, and marketing activities with possession utility. Yet, in the definition by Waters, who mentioned and acknowledged the importance of place utility, that is, materials flowing through suppliers to customers, and of form utility, that is, materials transformed into final products through operation within an organisation, he unfortunately left out another vital logistics factor, time utility. Because time and place utilities are intimately related to logistics, more attention will be paid to them rather than the others. An example of the difference made by these two utilities is if customers cannot buy a product whenever and wherever they need it, a purchase may not be made, which means that the purpose of production, namely, profit making, will not be achieved, and those customers will not be satisfied either. (Please refer to appendix one for a further understanding of the four types of economic utilities that are affected by logistics as indicated by Lambert et al., 1998)

Rushton, Croucher & Baker (2006) has defined logistics as “*The management of all activities, which facilitates movement and co-ordinates the supply and demand in the creation of time and place utility*” (p.6). Here, Rushton et al., pointed out another important role of logistics, which is to make the relationship between supply and demand smooth, and to scientifically manage supply activities, so that they meet demand requirements at the right place and the right time.

Ballou (1998) defined logistics as “... [*getting*] *the right goods or service to the right place, at the right time, and in the desired condition, while making the greatest contribution to the firm*” (p.6). Along with this, he discussed what the right goods,

services and the desired conditions are, clearly introducing the close connection between quality management and logistics management.

Christopher (2005) defined logistics management as “... *the process of strategically managing the procurement, movement and storage of materials, parts and finished inventory (and the related information flows) through the organization and its marketing channels in such a way that current and future profitability are maximized through the cost-effective fulfillment of orders*” (p.4). The major contributions of this definition are, firstly, to point out the importance of seamless information flow throughout the business organisation itself and its downstream and upstream business partners, and, secondly, to state the aim of logistics management as maximising business profits, which, indeed, is the major driver for businesses striving for good logistics performance.

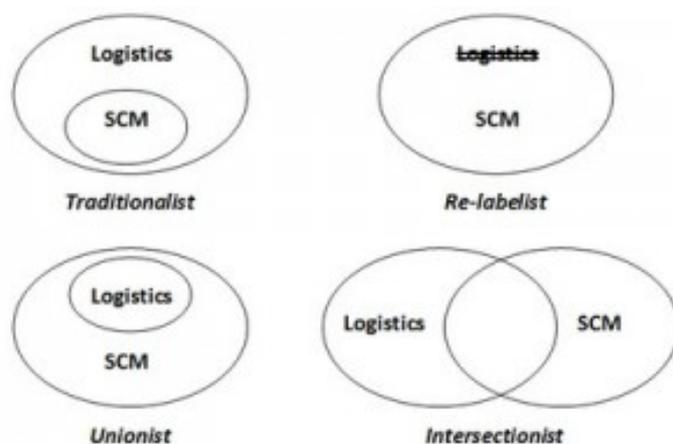
The world’s leading professional logistics and supply chain management (SCM) organization, the Council of Supply Chain Management Professionals (CSCMP), has defined logistics management as (CSCMP, n.d):“***The process of planning, implementing and controlling the efficient, effective flow and storage of goods, services, and related information from point of origin to point of consumption for the purpose of conforming to customer requirements***”.

As the most recognised definition, covering the very functions of logistics management, it encompasses the scope logistics activities, extending from the point of raw materials to that of final consumption, rather than placing logistics only on a certain part of the channel, thus widening logistics operations. Also, it mentions both effectiveness and efficiency in the flow of both information and goods delivery in order to achieve a better customer service.

### 2.2.3 The relationship between SCM and logistics management

“National Council of Physical Distribution Management” (NCPDM) was the first name of the CSCMP, its usage ending in 1985 in response to new ideas evolving in logistics. The name “Council of Logistics Management” (CLM) was therefore adopted until January 1, 2005, when CSCMP (Council of Supply Chain Management Professionals), which is still in use, took its place (Logistics Week, 2011).

There has been more than just name changing. The name changing reflects the expanded roles of the members of CSCMP within their business organizations and its broadened focuses, which has gone beyond logistics into other areas, such as procurement, operations, and marketing. Although CSCMP and other scholars have clearly defined logistics, many still cannot clearly distinguish logistics management from SCM well; these two terminologies are often used interchangeably, not only by logisticians in workplaces, but also some scholars. As Larson, Poist & Halldorsson (2007) explained there are four basic conceptual perspectives on SCM vs. logistics management; they stated: *“If logistics and SCM are considered fields within business, then the four perspectives cover all possible ways the two fields might be interrelated”*(p.3). Figure 2.1 below shows how the four perspectives work:



**Figure 2.1: Perspectives on logistics vs. SCM**

(Source: Larson et al., 2007)

- Logistics subsumes SCM (Traditionalist)
- Logistics equals SCM (Re-labelling)
- Logistics is subsumed by SCM (Unionist)
- Logistics and SCM partially overlap (Intersectionist)

In reality, Unionism is the mainstream ideology. Christopher (2005) said that “*SCM is a wider concept than logistics management*” (p.4), and Ballou (2004) also stated that “[*it is*] *SCM that captures the essence of integrated logistics and even goes beyond it*” (p.4). Waters (2010) argued that SCM is the beneficial extension of logistics to reach suppliers upstream and customers downstream. Individual logistics systems obviously play a role in the success of the overall supply chain (Coyle et al., 2003).

CSCMP (n.d) also can be recognised as Unionist, stated that SCM contains logistics management. Logistics management is the part of the supply chain in which efficient, effective flow and storage of goods and services are planned, implemented and controlled from the point of origin to the point of consumption in order to meet customer requirements. Therefore, in this paper, the Unionist perspective will be adopted as the guiding ideology throughout.

#### **2.2.4 Logistics is important to businesses**

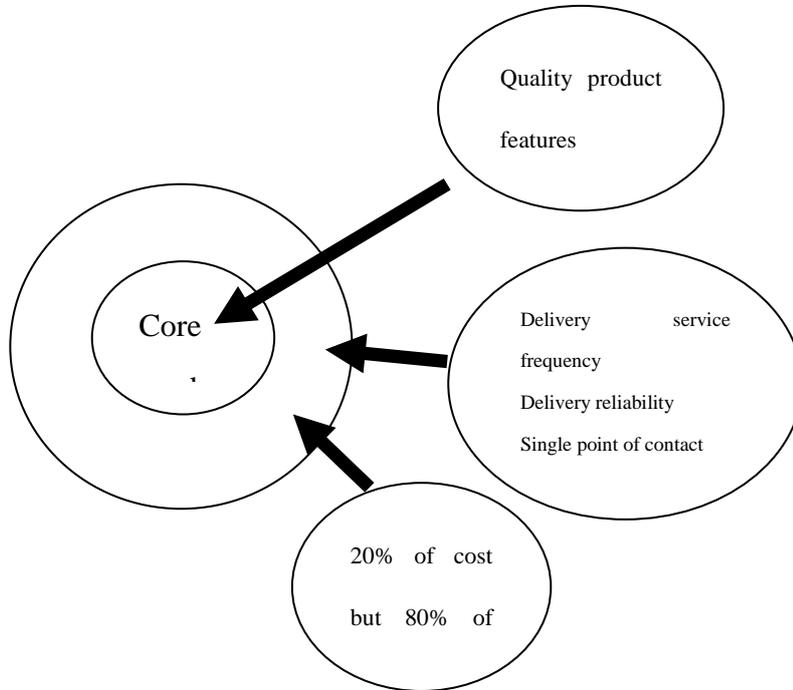
- **Good logistics leads to profitability**

The assumption that good products will sell themselves has gone, and the service era has arrived. As an increasing number of markets increasingly take on the characteristics of commodity markets, in which, firstly, customers see little difference between products at a functional or technical level, and in which, secondly, the increasing amount of substitutes available on the shelves makes customers shift around different brands easily, and in which, thirdly, there is an increasing

convergence of technology within product categories. Christopher (2005) believed that it is becoming progressively more difficult for businesses to compete purely on the basis of customer brand loyalty, the corporate public image, and new technologies, and that, therefore, many businesses have responded by focusing on service as a kind of competitive strategy. Cooper (1993) indicated that a powerful means of differentiation to businesses can be added by providing good customer service (p.25). Customer Service is considered to be an important aspect of the business by majority of the companies since market leverage has gradually shifted from businesses' side to the customers' side since the middle of the last century (Rushton et al. 2006). With regards to the new service era, Rushton suggested a solution: "*logistics plays a crucial role in providing good customer service*" (p.34). Lambert et al., (1998) also believed that customer service is the major outcome of logistics performance. Likewise Jonsson (2008) discussed the outcome of good customer service which a sound logistics performance has, referring to it as "*the influence of logistics on revenues takes place by creating good customer service*" (p.9).

Harrison & Hoek (2008) claimed that any product is made up of two parts, the physical product and its accompanying services. While the physical part is determined by marketing, R&D (research and development), manufacturing, etc, the service part is heavily influenced by logistics. Rushton et al., (2006) had similar ideas as to Harrison et al., (2008) and he claimed that one way to thinking of customer service is to distinguish the core product from the service elements related to it. He named the service elements as the "product surround" or "service surround", which includes the availability of the products, speed of delivery, after-sales support, etc. Ballou (1998) further found that customers do recognise logistics service elements as important, often ranking them ahead of product price, quality, marketing, and other related considerations. Indeed, a sound logistics performance is the most economic way for businesses to achieve a good customer service; as Rushton et al., (2006) explained, the product surround or logistics elements may well represent about 80%

of the impact of the product, but only 20% of the cost, and therefore, no matter how good the product may be, it is necessary to provide the customer with sufficient service. (For a detailed explanation, please refer to Figure 2.2)

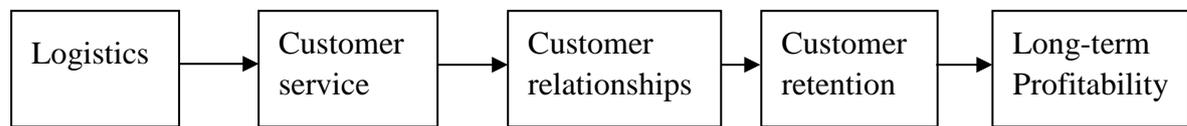


**Figure 2.2: Core products vs. product “surround”, illustrating the importance of the logistics-related elements.**

(Source: Rushton et al., 2006, p.35)

Ballou (1998) indicated that “*Customer service, ...[is] utilized effectively, [it] is a prime variable that can have a significant impact on creating demand and retaining customer loyalty*” (p.92), and “*sales are affected to some degree by the level of logistics customer service provided*” (p.102). Christopher (2005) had a similar opinion: that superior logistic customer service helps to build relationships with customers which, in itself, leads to improved rates of customer retention and the longer the customers stay, the more profitable they become; he further discussed the importance of the retention rate of customers by introducing the phrase “quality of earning”, which means that high retention rates make customer bases less volatile (Figure 2.3). Christopher (2005) was not alone in his finding either; Ballou (1998)

also claimed that “*Logistics customer service plays a critical role in maintaining customer patronage*” (p.104), and that’s very true, loyal customers are the bedrock of any businesses.



**Figure 2.3: The logic between logistics and profitability**

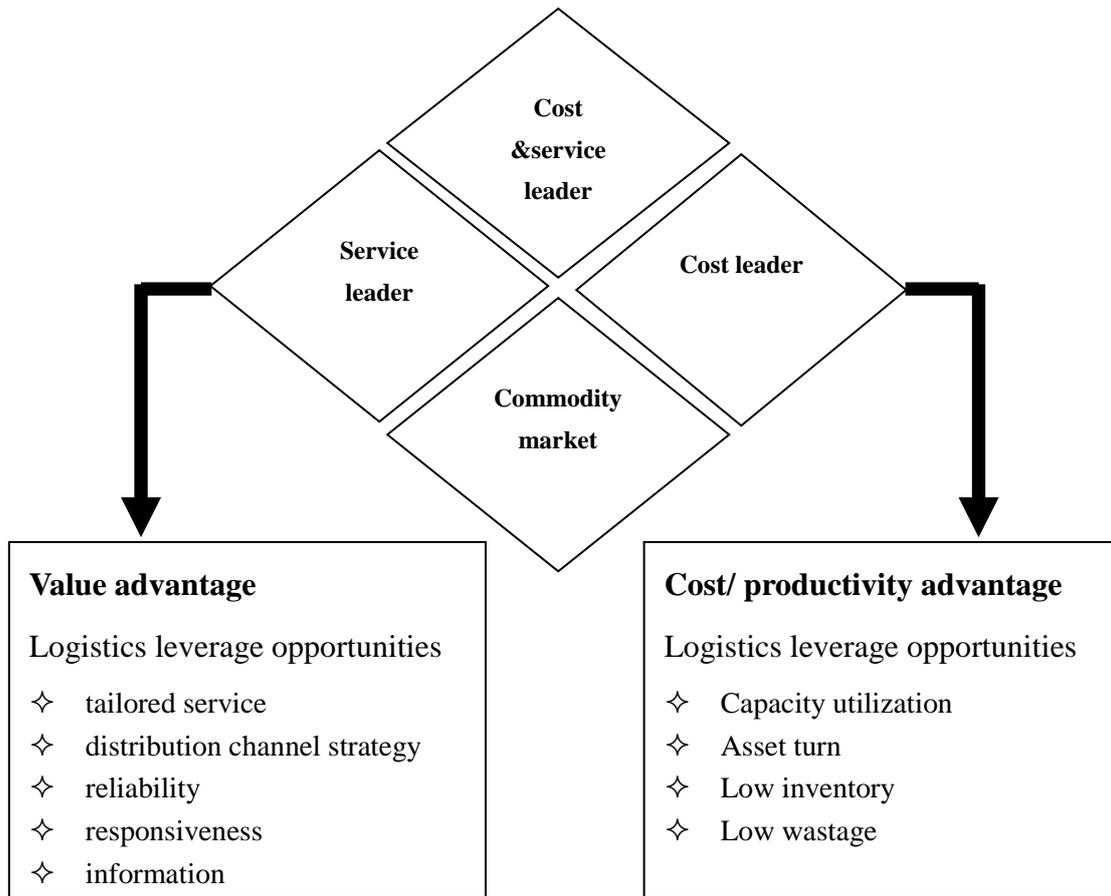
(Source: Cooper, 1993, p.25)

- **Business competitiveness through logistics**

Porter (1980) classified business strategies using four different categories, namely, *pure cost leadership, pure differentiation, cost with differentiation, and no competitive advantage at all*. According to this widely recognised theory, businesses have to compete through either cost reduction or differentiation. Christopher has interpreted differentiation as “*the power of customer service as a potential means of differentiation [which is being] increasingly recognized*” (Christopher, 2005, p.45). Since logistics has become a vital competitive weapon in business, Rushton et al., (2006) has developed and extended Porter’s competitive strategy matrix from a logistics perspective, and according to his explanation, both cost leaders and differentiation can be improved by means of different kinds of logistics performance excellence (Figure 2.4). Likewise, Christopher (2005) claimed that the source of competitive advantage is found firstly in the ability of the organisation to differentiate itself, in the eyes of the customer, from its competition and secondly by operating at a lower cost and hence at greater profit (p.6), and has created yet another competitive strategy matrix based on Porter’s (1980) (Figure 2.5). In his matrix, “commodity market” refers to those businesses whose products are indistinguishable from their competitors’ offerings and have no cost advantage. These businesses have to either move to the right of the matrix to become a cost leader, or further up towards the

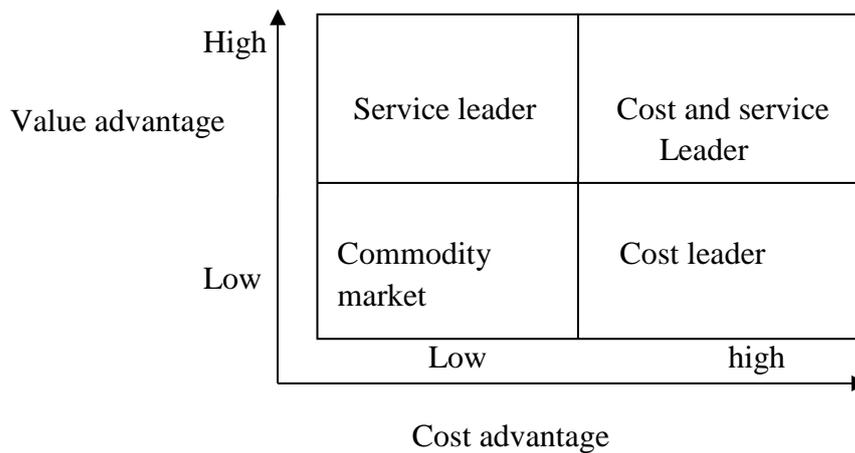
service leader category, otherwise, they will constantly work hard for less. Obviously, cost reduction is another option besides service differentiation for businesses who must struggle. In fact, cost reduction has been ranked at the top of the list for firms to maximise their profits, according to the results of a survey of CEOs of Fortune 500 manufacturing firms and Fortune 500 service firms (Stock et al., 2001). According to Harrison et al. (2008), low costs translate into advantages in the marketplace in terms of low prices or high margins, or a bit of each (*Harrison et al., 2008, p.18*). However, Stock et al., (2001) claim that dollar-for-dollar profits can be made through good logistics practices, simply because they do not involve related costs to support them, unlike the practice of increasing sales through a promotion program, for which there will be a range of related costs, such as spending on advertising, increased inventory cost, and other costs associated with these. Christopher (2005) analysed cost leadership from another angle, arguing that, traditionally, cost leadership is based on the economic scale and is gained through sales volume, while it is, in fact, preferable for that volume to be gained early on in the product life cycle. Often, cost leadership is not available, particularly not in a mature industry where a substantial market share is very difficult to gain; besides, though new technologies might provide opportunities for cost reduction, the same technology is quite often available to competitors too. However, in many industries, logistics costs represent such a large portion of total operation costs, that major cost reductions could be made through a fundamental re-engineering of their logistics processes, for example, by utilising contracted logistics services.

Clearly, businesses can gain competitive advantage through being either a cost or a service leader, but the businesses that will be the leaders in the markets of the future will be those that have achieved the twin peaks of excellence, both service and cost, and logistics management certainly has the potential to assist businesses to achieve this position.



**Figure 2.4: The logistics implications of different competitive positions**

(Source: Rushton et al. 2006, p.28)



**Figure 2.5: Logistics and competitive advantage**

(Source: Christopher, 2005, p.10)

### 2.3. OUTSOURCING

Porter's (1998) value chain philosophy broke business up into discrete activities rather than viewing it as a whole, with each activity being able to contribute to businesses' relative cost position and create a basis for differentiation, gaining businesses competitive advantage through the capability to perform these activities more cheaply and/or better than others. The catch-cry of Porter's (1998) value chain theory is that businesses have to look at each activity on their value chain and evaluate whether it is outperforming their competitors; if it is not, Christopher (2005) suggested that a way forward in such a situation is to "*perhaps ... consider outsourcing the activity to a partner who can provide that cost or value advantage*" (p.14).

Outsourcing is not a new word at all. This word was coined to describe the growing trend of large companies transferring their information systems to providers in the late 1980s, while the notion itself can be traced back at least to time of World War II, when the facilities management services were provided by the U.S. Nowadays, outsourcing is adopted in an even wider range of contexts. The British Government's Department of Inland Revenue and Social Services outsources its major computing functions (Halvey & Melby, 2007). Ninety four percent of Fortune 500 CEOs indicated that they outsource, many predicting a major increase in it, and even smaller and mid-size businesses are showing an increased rate of outsourcing for their individual activities (Greaver, 1998).

White & James (1996) defined outsourcing in the business world as "*a contractual relationship between an external vendor and an enterprise in which the vendor assumes responsibility for one or more business functions of the enterprise*" (p.xiv).

Sangam (2007) described outsourcing in easier terms as: "*handing over the work formerly executed by an internal work stream to an outside agency that specializes in these kinds of activities*" (p.20).

According to the above definitions, it is fairly easy to see the theme of outsourcing, which is internal activities are being transferred out.

Johnson (1997) explained outsourcing differently, arguing for a perspective of outsourcing as a phenomenon that contains two basic and separate parts for managers or decision makers to consider. The first is social and economic understanding, because outsourcing brings with it disruption and rapid change to long-practiced ways of work, and people or processes will be changed to certain degrees. The second part is what outsourcing means to organisations, how it will be executed, and what results and effects they expect from the process. Johnson (1997) pointed out that, without a full understanding of both parts of the outsourcing equation, managers who jump into outsourcing are more likely to make major mistakes.

A new trend of outsourcing is emerging. Historically, outsourcing was adopted when businesses could not perform certain business functions well, perhaps due to incompetence, lack of capacity, financial pressures, etc, while nowadays, outsourcing is being used more and more as a method for organisational restructuring and/or reengineering in order to enhance business competitiveness. The philosophy behind this trend is businesses and management departments' increasing recognition of the importance of paying undivided attention to building core competencies and customer services; anything that distracts from this focus will be considered for outsourcing. In addition, in the past, the business activities that were outsourced were more often limited to component parts manufacturing and information systems, however, with today's fast pace of change, businesses are reluctant to continuously invest in and maintain cutting-edge technology and technical personnel internally, when they know that similar assets are out there, waiting to be hired, developed through others' investment. Moreover, large corporations tend to outsource entire processes; this is done through strategic alliances and some managerial decision transfers. Also, large corporations tend to outsource overseas business functions to large service providers with strong international presence and experience.

Halvey et al., (2007) summarised the business processes that have come under close examination as potential candidates for outsourcing, saying that they typically fall within one of seven categories:

- Finance and accounting
- Investment and asset management
- Human resources
- Procurement
- Logistics
- Real estate management
- Miscellaneous (energy services, customer service, mailroom, food processing)

Logistics has often been among the first functions to be outsourced (Hoiland, 2004), and according to Langley, Zabawa, Dort, Strata, Morton, Riegler, ... & Goh (2007), about 80 percent of industrial companies outsource logistics activities to LSP (logistics service providers), accounting for an average of 60 percent of their total logistics costs. Obviously, logistics outsourcing is not only a first choice for outsourcing among business processes, but also represents a large portion of businesses' logistics spending, and is a vital part of logistics practice.

## **2.4. THIRD PARTY LOGISTICS**

### **2.4.1 Definition of 3PL**

The term *3PL* has always been used interchangeably with other terms, such as *contract logistics*, *logistics outsourcing*, *contract distribution*, and *logistics alliance*. Whatever name is adopted, all have the same meaning, that of the organisational practice of contracting out part of or all logistics activities that were previously performed in-house.

In recent years, 3PL has received considerable attention from both scholars and practitioners, resulting in a boom of research and writings in the field, however, in practice, 3PL can either mean traditional “arms-length” sourcing of simple activities, such as outsourcing transportation and/or storage, or, in other cases more sophisticated activities, such as outsourcing the entire logistics function to an external service provider. This has caused a few different definitions of 3PL to emerge from different perspectives in the literature, which can be grouped into three categories, namely, broad, narrow, and hybrid. These definitions may help to explain the various scopes attributed to 3PL.

#### The broad category

Gadde & Hulthén (2009) defined 3PL as “*the use of external companies to perform logistics functions that have traditionally been performed within an organisation. The functions performed by the third part can encompass the entire logistics process or selected activities within that process*” (p.633). This broad definition tends to suggest that businesses could outsource any form of logistics activity that was conducted internally to a 3PL service provider, either in an instance of traditional arm-length sourcing, or a more complex instance of outsourcing.

#### The narrow category

Knemeyer & Murphy (2004) defined 3PL as “*a relationship between a shipper and third party, which, compared with basic services, has more customized offerings, encompasses a broader number of service functions and is characterized by a longer term, more mutually beneficial relationship*” (p.35). This narrow definition appears to link 3PL to certain distinctive features of logistical outsourcing relationships, and in it, they also pointed out what distinguishes 3PL from traditional arm-length outsourcing activities, namely, provision of a broader range of services, a long term contractual relationship, and customised logistics services.

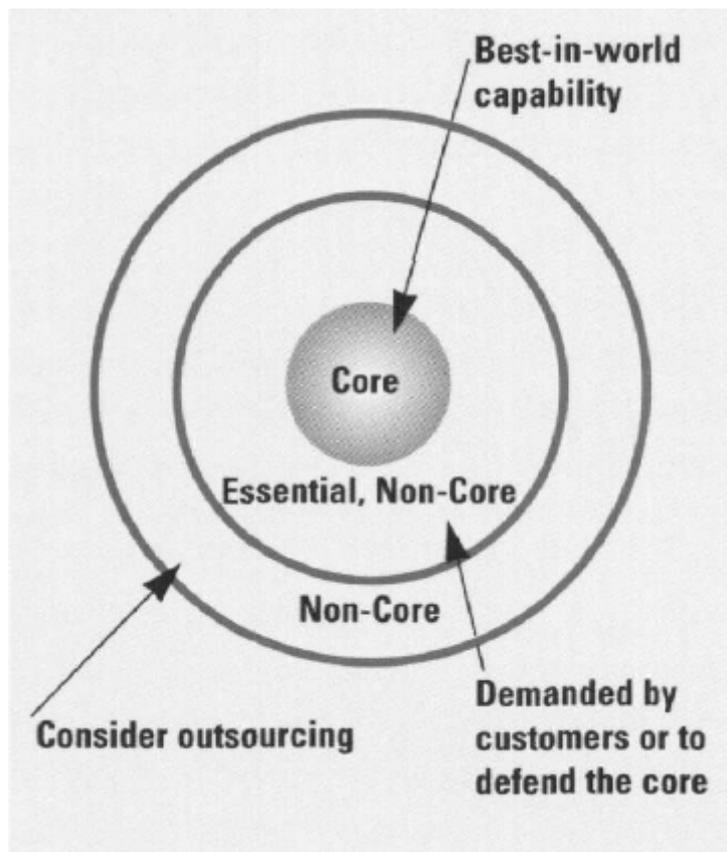
### The hybrid category

Hilletofth, Hilmola & Finland (2010) defined 3PL as “*relationships between interfaces in the supply chain and third party logistics providers, where logistics services are offered, from basic to customized ones, in a shorter or longer term relationship, with the aim of effectiveness and efficiency*” (p.49). This definition is more or less in the middle of the narrower and broader ones, for the simple reason that the author did not define the scope of 3PL, whether it is simply customised services, and whether shorter and longer term relations are all considered as 3PL. However, he did mention that the aim of 3PL is to achieve an effective and efficient outcome for both clients and service providers.

#### **2.4.2 Objectives of 3PL**

- **To focus on core competencies**

The *core competency* of a business is its crown jewels, so it must be carefully nurtured and nursed (Hafeez, Zhang & Malak, 2002). Quinn (1999) defined core competencies as not being products or those things we do relatively well, rather they are those activities—“*usually intellectually-based service activities or systems, that the company performs better than any other enterprise, they are the sets of skills and systems that a company does at best-in-world levels and through which a company creates uniquely high value for customers*” (p.12). Razzaque & Sheng (1998) claimed that, through its core competencies, businesses can gain both efficiency and stability and reduce costs by focusing their resources on what they do best.



**Figure 2.6: What are the core competences**

(Source: Quinn, 1999, p.12)

And in the same vein Sink & Langley (1997) claimed that to remain competitive, businesses have to start to concentrate on those activities that they regard as their core competencies, outsourcing non-competency activities to an external 3PL provider and taking the advantages of its expertise. Furthermore, focus on core competencies was ranked the third most important reason why businesses outsource their logistics functions to 3PL service providers (please refers to Table 2.1).

**Table 2.1 Ranked reasons for outsourcing**

Benefits	All regions (%)
Greater ease of managing outsourced logistics services	75
Reduced management time and effort	69
Enabled our company to focus more on our core business	67
Overall logistics efficiency/lower cost	56
Reduction in the number of logistics services providers	51
Enhanced shipment visibility	39
Quicker response	37
Optimized capacity utilization	34
Extended global reach (network)	31
Custom-built solutions	24
Capability to work on more complex solutions	24
Risk-sharing with integrated logistics service provider	23
Inventory reduction	22
Early problem detection	22
Proactive IT approach	18

(Source: Bajec & Zanne, n.d, p.4)

- **To answer the challenges of globalization**

Moreover, outsourcing is clearly an important economic activity and certainly a key response to globalisation. Outsourcing is a frequent term in the literature of globalisation. Rao & Young (1994) discovered that leading companies have already recognised opportunities to increase market share and revenue and to achieve efficiency through global sourcing and overseas manufacturing, and therefore, despite global logistics being a much more complex activity than that of doing it domestically, it has, for these businesses, become a necessary objective. In the same vein, Wouters (2010) pointed out that since globalisation has emerged as a major force shaping business strategies, and has led businesses to design products that suit the global market rather than that of one country or few regions, it has come to the point that lack of specific knowledge of customs, tax regulations, and infrastructure of targeted countries has driven those same international businesses to benefit from the specialisation of 3PL service providers. It is true that globalisation is a major driver of the 3PL industry, especially in emerging markets such as China. 3PL service providers that have a global presence may help companies expand their geographic reach due to their familiarity with local governments, regulatory structures, business norms, and cultures of different countries (Mitra & Bagchi, 2008). According to Wang, Zantow, Lai & Wang (2006), some businesses reduced logistics costs by 30% to 40% and greatly streamlined their global logistics processes.

- **To improve profitability**

Quinn (1999) indicated that historically, when business is developing, the temptation is to hire more staff, expand facilities, and bring more of the business in-house, where firms hope to better control costs, whereas under today's business environment, there are innumerable opportunities for businesses to increase profits through outsourcing. In addition competition is more intense than ever before and profit margins are decreasing, so businesses have to utilise 3PL service providers to reduce logistics costs in order to keep profitability at a reasonable level (Huang & Kadar, 2002).

Razzaque et al., (1998) explained that outsourcing, if used properly, can contribute to profits through:

- enabling users to gain a competitive advantage
  - adding measurable value to products
  - enhancing customer service
  - assisting in opening new markets and in providing dedicated resources
- (p.92)

Jiang, Frazier & Prater (2006) added several other ways that 3PL service providers may assist the increase of profitability:

- They provide staffing on the basis of need, thus avoiding the need for costly staff benefits.
- They may put the best capabilities and technology at the business's disposal without the business having to pay for them.
- They may have facilities across the globe to use as and when required without the business setting up costly logistics facilities.

Bettis, Bradley & Hamel (1992) also discovered that business situations like losing competitive advantage and seeing this reflected in declining profitability also leads to outsourcing.

- **To reduce capital investment**

Capital investment reduction is another major driver for outsourcing decisions. As Sangam (2007) explained, logistics outsourcing covers various activities such as the outsourcing of facilities, equipment, and infrastructure, and by outsourcing the right aspects, businesses can go from being asset-based to non-asset-based, which then makes more capital available for core competences and in turn increases the turn on assets. This is particularly true when businesses choose an asset based 3PL service

provider, “which offer[s] dedicated physical logistics services primarily through the use of their own assets, typically a truck fleet or group of warehouses or both” (Razzaque et al., 1998, p.94). Table 2.2 testifies the fact of capital investment reduction through the utilization of 3PL.

**Table 2.2: Fixed Asset Reductions**

Year	All regions	N. America	W. Europe	Asia Pacific	Latin America
2006	20.00%	12.70%	21.90%	21.00%	36.60%
2005	N/A	8.00%	20.00%	33.00%	14.00%
2004	N/A	16.00%	17.00%	25.00%	41.00%
2003	N/A	16.00%	5.00%	N/A	N/A
2002	N/A	16.00%	N/A	N/A	N/A

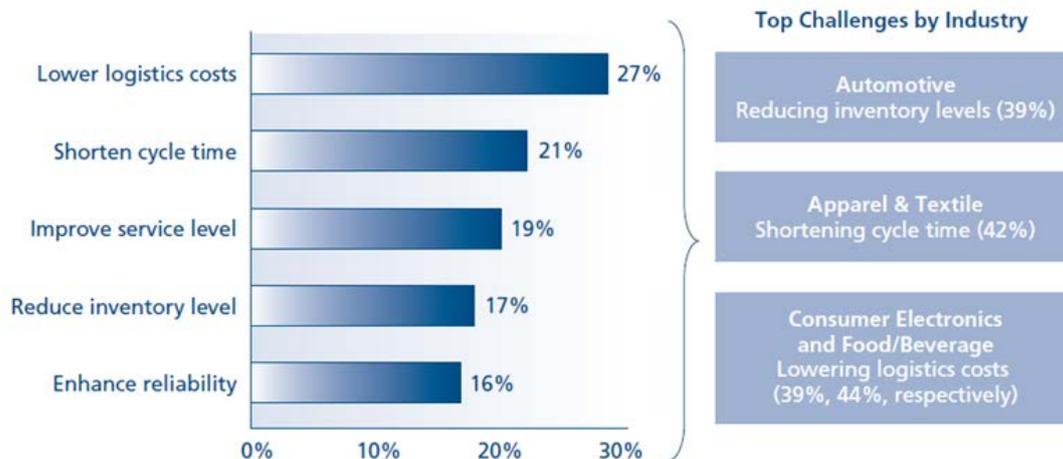
(Source: Sangam, 2007, p.37)

Improvement of return on assets (ROA) is along the same lines as capital investment reduction, and ROA is a key indicator of how a business performs in terms of total profits against total assets. As Razzaque et al., (1998) claimed, 3PL service providers convert fixed costs into variable costs for their users, because outsourcing enables businesses to utilise 3PL service providers’ assets, facilities, etc., without having to invest in these, so that the benefits are twofold and also improves ROA.

- **To reduce costs**

The topic of cost reduction can be found in almost every paper on 3PL, which directly and obviously reflects its importance for 3PL users. Indeed according to Huang et al., (2002), the need to reduce costs or amount of capital invested is still the top priority for shippers outsourcing their logistics activities, as one director of white goods manufacturing noted: “*competition is fierce, and margins are decreasing, so we are looking to external logistics providers to reduce our logistics costs in order to*

*maintain profitability” (p.4).* In addition, more than two thirds (69%) of 3PL service providers felt that shippers are driven more by price than anything else (refer to Figure 2.7).



**Figure 2.7: Shippers' key logistics challenges**

(Source: Huang et al., 2002, p.4)

According to Mitra et al., (2008), most businesses which have trade relations with 3PLs have been either positive or very positive about the amount of cost reduced, because 3PL service providers, as a result of consolidation of shipments originating from different sources, enjoy economies of scale, which enables them to utilise capacity better and to spread logistics costs, and may result in a substantial savings on logistics operations for each contracted business, all of which can be hard for an individual business to achieve. A similar opinion was also voiced by Wouters (2010), who said that the main benefit of using 3PL is to increase net value by means of the reduced costs which result from economics of scale and economics of scope. Parashkevova (2007) has quantified the cost reduction of businesses that use 3PL in Europe in terms of the statistics shown below; they have:

- “reduced inventory management costs by 15-30%
- reduced logistics costs by 8.2%
- fixed logistics asset reduction to 15.6%

- reduced the length of the average order cycle from 10.7 to 8.4 days
- reduced overall inventories by 5.3%” (p.35)

Sangam (2007) summarized the quantum of cost saving through 3PL from 2002 to 2006 worldwide, as shown in Table 2.3.

**Table 2.3: Logistics costs reductions associated with 3PL implementation**

Year	All regions	N. America	W. Europe	Asia Pacific	Latin America
2006	11.50%	9.90%	11.00%	13.70%	11.70%
2005	N/A	11.00%	10.00%	11.00%	10.00%
2004	N/A	15.00%	11.00%	15.00%	17.00%
2003	N/A	9.00%	7.00%	N/A	N/A
2002	N/A	7.00%	33.00%	N/A	N/A

(Source: Sangam, 2007, p.40).

- **In improving operational efficiency**

Many successful businesses have adopted a just in time (JIT) strategy of focusing on the areas in their core competencies, contracting non-core areas to an outside supplier in order to improve operational efficiency, and logistics functions are normally the first candidate for outsourcing (Spencer, Rogers & Daugherty, 1994). This is because, in JIT philosophy, inventory and logistics control have become even more crucial to manufacturing and distribution operations. The complexities and higher requirements of supply chain operation in a JIT environment are pushing those who adopt it to supplement their own resources and expertise with that of 3PL services (Razzaque et al., 1998), since 3PL service providers are willing to invest in cutting edge technologies and new equipment to sharpen their competitive advantage and increase operational efficiency in order to win more contracts from shippers and to achieve, in the end, efficiency with two motives, firstly, to win more contracts, and secondly, to achieve economic scale. As Wang (2010) pointed out, collaboration with 3PL providers is a key element indeed, since, because of it, the upstream players

can operate the JIT system with higher delivery frequency, smaller delivery lot size, and so on.

As an indication of this effectiveness, Langley, Boetsch, Albright, Wyss, Morton, Gueth & Hoemmken (2010) quantified the improvements in regard to some key elements of logistics performance through the utilization of 3PLs, as shown in Table 2.4.

**Table 2.4: Key elements of logistics performance through the utilisation of 3PLs**

<b>Shippers Report Measurable Benefits from Use of 3PLs</b>		
<b>Results</b>		<b>All Regions</b>
Logistics Cost Reduction (%)		15%
Logistics Fixed Asset Reduction (%)		25%
Inventory Cost Reduction (%)		11%
Average Order Cycle Length	Changed From	17 days
	Changed To	12 days
Order Fill Rate	Changed From	73%
	Changed To	81%
Order Accuracy	Changed From	83%
	Changed To	89%
Source: 2010 15th Annual Third-Party Logistics Study		

(Source: Langley et al., 2010, p.4).

- **To protect the environment**

According to Wolf & Seuring (2010), it is transport that is the blood of the twenty-first century economy; however, numerous environmental concerns have been raised about it, such as air pollution, increasing damage of ecological systems and of road construction, noise, and climate change.

Fortunately, according to a survey conducted by Lieb & Lieb (2010), the majority of international 3PL service providers have made serious commitments to environmental sustainability improvements during the past several years. They have spent major capital on improving the environmental friendliness of logistics operations and made organisational changes to address such issues. Table 2.5 below shows the key drivers for making such commitments.

**Table 2.5: Most important reasons for establishing sustainability program**

Reason	Total weighted points <sup>a</sup>
Corporate desire to do the right thing	85 (24)
Pressure from customers	57 (7)
Corporate desire to enhance company image	41
Corporate desire to attract green customers	28
Competitive pressures	20

**Note:** <sup>a</sup>Number of “most important” mentions are provided in parentheses

(Source: Lieb & Lieb, 2010, p.526).

According to Langley et. al., (2008), a wide range of logistics related activities a 3PL could help customers with green supply chain initiatives, even though there was still a big gap between what clients’ or/and society expected and what 3PL service providers have been actually doing, while at least it is still a very positive signal that indicated 3PL businesses are well onto this serious social issue. (Refer to table 2.6 for more details)

Alongside this, Tezuka (2011) stated his opinion about supply chain greening through the utilisation of 3PLs: that, though 3PL service providers may randomly reduce environmental cost through more efficient operations, for instance, more environmental friendly vehicles and consolidation shipments, the major push behind it is to reduce costs and maintain profits, which may not coincide with environmental concerns, and also that 3PL clients prefer green supply chain management not to generate any extra costs, if there is any, sharing with their clients is preferred.

Although there is still no specific regulation that forces 3PL providers to operate in an environmental friendly manner, he argues that they should be given incentives to being green-conscious players, such as ISO14001 certification, which can enhance the reputation and market value of the certificate-winning businesses.

**Table 2.6: Important ways a 3PL could help customers with green SC initiatives**

Solution Area	Overall	
	Most Important	My 3PL Currently Performs
Improving transportation efficiency, and thereby reducing carbon emissions, through effective shipment consolidation, routing, and mode selection	77%	31%
Reducing the use of non-recyclable packaging materials	53	15
Managing energy efficient distribution centers	50	15
Improving transportation and/or dock scheduling to reduce the carbon emissions associated with demurrage	49	22
Providing consultative advice with regards to implementing a green supply chain	48	8
Using alternative fuels, such as liquefied petroleum gas or compressed natural gas, to reduce greenhouse gas emissions	47	8
Facilitating reverse logistics processes to recover otherwise wasted materials	46	19
Providing effective inventory management that reduces the need for small-sized expedited shipments	43	15
Use of hybrid electric vehicles (Internal combustion engine / electric motor powered by a rechargeable battery)	40	8

(Source: Langley et al., 2008, p.26).

All in all, the above literature review explains certain major drivers of 3PL, including hard dollar drivers, which are eliminating investment on fixed assets, cost reduction, and operational efficiency, and so on, and soft benefits drivers, which are greening the

supply chain system as a whole, freeing up executives' time for core businesses, and so on.

### **2.4.3 Obstacles to adopting 3PL**

Undoubtedly, businesses have been experiencing tremendous benefits from 3PL, as discussed above, and there has been increasing clarity on competent logistics and supply chain practices which can lead to organizational efficiency and effectiveness. It is also evident that the effective use of outsourced logistics services can be a key to success. (Langley et al., 2010, p.7). Indeed, most businesses nowadays are using 3PL to some extent or other. However, some businesses are still reluctant to adopt 3PL, or have tried it but have failed for some reason. According to Langley et al., (2010), there are a few barriers which explain the motives of non-users (p.13):

- “Logistics is a core competency at their firm (19%).
- Cost reductions would not be realised (15%).
- Control over the outsourced functions would diminish (14%).
- Logistics is too important for them to consider outsourcing it (13%).
- Service level commitments would not be realised (11%).
- They have more logistics expertise than 3PL providers (10%).
- Global 3PL capabilities need improvement (6%).
- There are issues relating to the security of shipments (5%).
- They previously outsourced logistics, and chose not to continue (5%).
- 3PL providers are unable to form meaningful and trusting relationships (3%).
- It is too difficult to integrate their IT systems with the 3PL's (8%)”.

Other commentators have also set out their own understandings of why 3PL services are not being used by some businesses, as discussed below.

Selviaridis & Spring (2007) claimed that the cost reduction benefit of utilising 3PL is not always realised, and, even if realised, might be offset by the 3PL providers' profit margin; besides, it can be difficult to evaluate cost savings due to lack of awareness of internal logistics costs. In a similar vein, Wang & Regan (2003) also pointed out that there are many hidden costs associated with 3PL activities: monitoring 3PL providers to see that they fulfill their contractual obligations, legal costs when bargaining and negotiating in the contracting process, vendor management costs for logistics outsourcing, and the like.

Mitra et al., (2008) found that adopting 3PL services could lower employee morale through a shift of power and impending downsizing of the logistical workforce, and Embleton & Wright (1998) found that reduction in employee morale pushes talented and marketable staff to look for new opportunities elsewhere. Quinn (1999) hold a similar idea, having found that, though higher-ranking executives prefer outsourcing, since it can save their time for more important things, lower- to intermediate-level managers in fact tend to be actively hostile to outsourcing, fearing loss of jobs, prestige, or power.

Some loss of control results in all collaborative projects, while in outsourced arrangements partial control of the project inevitably passes from the sponsor to the collaborator (*Piachaud, 2002, p.87*). Beaumont & Sohal (2004) also criticised outsourcing as potentially causing loss of flexibility, since businesses have to negotiate with contractors. For example, a change in technology to create new opportunities or lower prices, if the outsourced function is kept in-house, can be carried out at the managers' word. Jennings (2002) claimed that, with the absence of formal policy guidelines, core competency activities or/and near core competency activities can involuntarily be outsourced, leading to a loss of critical skills.

Wilding & Juriado (2004) discovered that some soft issues can also lead to the failure of 3PL partnerships, such as cultural incompatibility or poor communication.

#### **2.4.4 Ingredients of successful 3PL partnerships**

Failure to outsource well can bring about significant costs which are very hard to reverse. Greaver (1999) said that like marriage, outsourcing is much easier to consummate than it is to terminate, and recover from, if done poorly (*p.9*). Therefore, carefully selecting a suitable 3PL service provider right from the beginning and remaining a mutually beneficial client-provider relationship is critically important.

Logistics strategies should be integrated and aligned with corporate strategies (Longda & Masters, 1994). After studying 3PL providers' strategic postures, Sum & Teo (1999) classified them into 4 different types, namely, pure cost, pure differentiation, cost and differentiation, and no competitive advantage, and out of these four, found that 3PL businesses pursuing a cost and differentiation strategy outperformed those adopting others. Therefore, when businesses decide to outsource their logistics functions to a 3PL service provider, they must select one which has a business strategy that matches theirs.

Allen, Dort, Langley, Caporale & Dale (2004) argued that, in order to build up a sustainable contract logistics relationship, firstly, the 3PL users must classify 3PL service providers more as strategic partners and/or integrators than tactical or operational logistics providers. Secondly, the users must be actively involved in innovative and constructive deal structures that motivate both parties to do what is desired. The 3PL providers must also constantly update their resources and skills to offer competitive services for users, though this is likely to bring pressures to bear on profitability in a short run.

Trust between 3PL users and a provider plays a key factor in the success of logistics outsourcing relationships (Moore, 1998). Tian, Lai & Daniel (2008) pointed out that high levels of trust can reduce transaction and agency costs, and that trust has a

special capacity to create substantial competitive advantages for logistics outsourcing partnerships. Conversely, Kwon & Suh (2004) claimed that lack of trust between parties often results in lower productivity, efficiency, and effectiveness, as each party spends precious time scrutinising transactions and speculating on each other's credibility, reliability, etc. According to one study, as many as one-third of business partnerships failed because of lack of trust among trading partners.

Moore (1998) claimed that information exchange can be used by 3PL providers as a strategy to enhance 3PL users' trust and commitment in their trade relationships. This is because sharing information may be interpreted as an exhibition of good faith and a sign of trust (Doney & Cannon, 1997), and exchanging important information at each stage helps to bridge the gap between partners, enabling the LSP (logistics service provider) to take initiative and execute corrective actions to achieve the required coordination and integration (Sink et al., 1997).

Qureshi, Kumar & Kumar (2007) stated that a healthy relationship, and that, specifically, the awarding of contracts from top management motivates LSPs morally and economically. Razzaque et al., (1998) had a similar idea, saying that, to make contract logistics work, a high level of commitment and resolution is needed, especially on the 3PL users' side. In addition, as mentioned previously, outsourcing is generally not welcomed by lower- to middle-level managers due to the fear of loss of power, job, reputation, and the like, which is why top managers have to be hands-on in this relationship and try to preserve workers' morale and cooperation (Maloni, 2006).

A longer-term contract is a vital ingredient for a durable relationship between 3PL users and providers (Smith & Greenwood, 1998). Qureshi et al., (2007) also claimed that long-term contracts between 3PL users and providers create an atmosphere of trust and commitment, and a precise and long-term contract with clear details of

expectations, responsibilities, and performance forms the basis of a long-term relationship. Also, higher levels of contract formality increase satisfaction in the contractual relationship (Atkin & Rinehart, 2006). Moreover, Razzaque et al., (1998) stated that, from the learning curve perspective, the longer the relationship lasts, the more efficient and effective it becomes.

## **2.5. FOURTH PARTY LOGISTICS**

The term *4PL* was first coined and registered by Accenture as a trademark in 1996. The increasing complexity of logistics management, coupled with the increasing needs of information technology, has given the birth to a super manager, called 4PL, which integrates customers, businesses, and their suppliers (Li, Liu, Lei, Zhao & Ren, 2003).

### **2.5.1 Definition of 4PL**

Hoek & Chong (2001) defined 4PL as *“a supply chain service provider that participates rather in supply chain co-ordination than operation services. It is highly information based and co-ordinates multiple asset-based players on behalf of its clients”* (p.463).

Win (2008) further explained 4PL as being *“an independent, singularly accountable, non-asset-based integrator of a client’s supply and demand chains. The 4PL’s role is to implement and manage a value creating business solution through control of time and place utilities and influence on form and possession utilities within the client organisation”* (p.677). In saying this, he puts together two major elements, the interaction between 4PL and four economic utilities, and the objective of 4PL, which is to create value for its client organisation.

## 2.5.2 Differences between 3PL and 4PL

Though it is quite possible for a major 3PL provider to grow into a 4PL organisation using its existing structure (Gattorna, 1998), there are nevertheless some clear differences between them. Win (2008) has distinguished 4PL from traditional 3PL in a few different areas, as shown in Table 2.7.

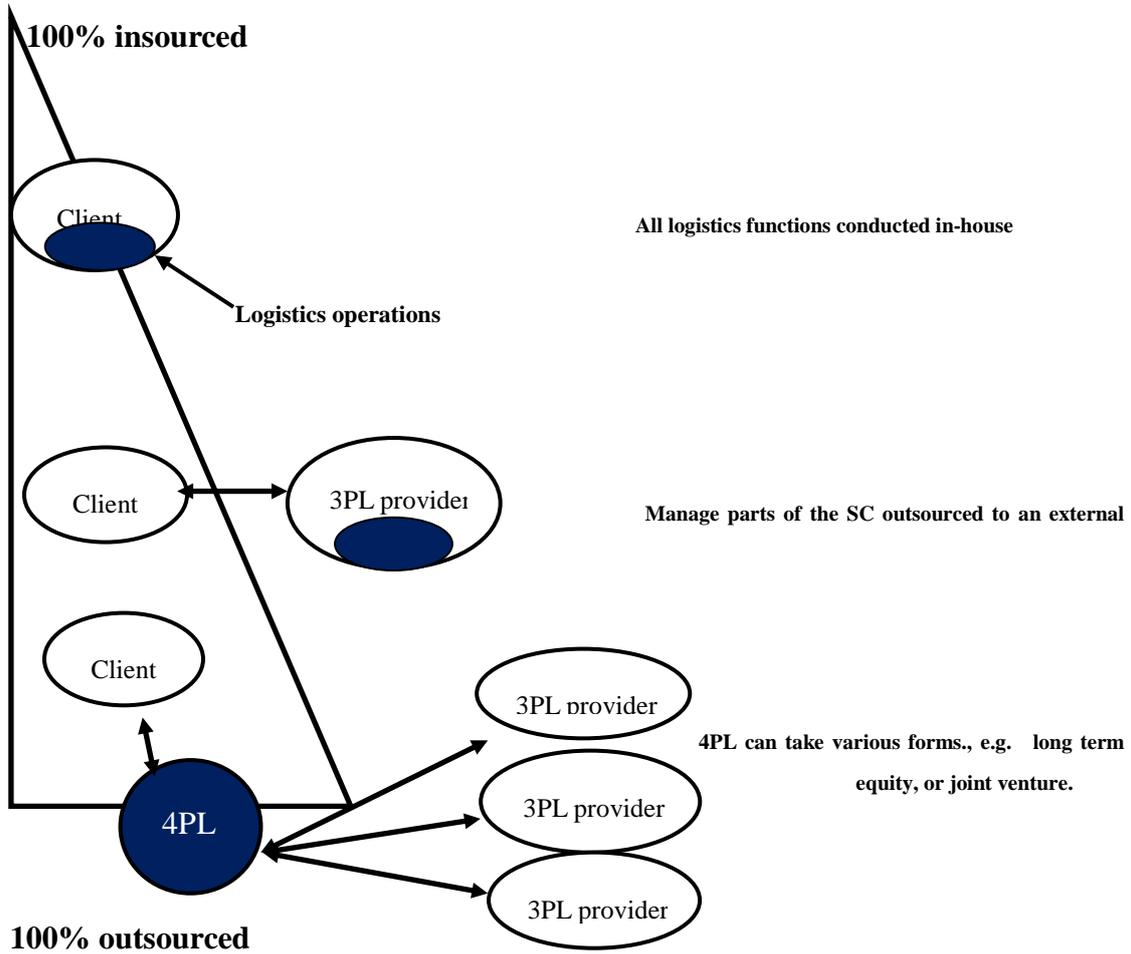
**Table 2.7: The value a 4PL provider can contribute to an organisation**

Factor	3PL	4PL
Asset basis	Asset based (e.g. warehouse/transport)	Non asset based (except perhaps information technology systems)
Accountability	Part (in conjunction with internal resources &/or other 3PL's)	Total singular accountability (as if internal)
Role	Logistics (typically)	Logistics, supply & demand chain integration
Business impact	Influences time & place utilities	Controls time & place utilities while also influencing form & possession utilities
Performance/success measurement	Cost	Value creation within client organisation

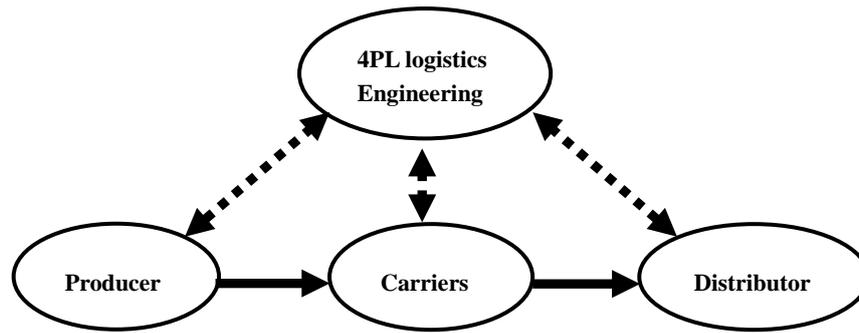
(Source: Win, 2008, p.684).

Gattorna (1998) also found that the 4PL is often a joint venture between a primary client and one or more partners, and he made an even wider comparison which included 3PL, 4PL, and logistics insourcing, claiming that the 4PL working philosophy combines the advantages of logistics insourcing and outsourcing to provide maximum overall benefits, as demonstrated in Figure 2.8. Fulconis, Saglietto & Paché (2006) argued that 4PL can be considered as a new player which acts as a network architect, since, for a 4PL, efficient functioning involves directly dealing with a mass of information and broadcasting it to producers, distributors, designers, and carriers. Moreover, since they do not own any logistics assets apart from information systems, their role can be described as a type of logistical consultant,

managing logistics activities and choosing the most suitable means for its customers. Their ideas are demonstrated in Figure 2.9.



**Figure 2.8: Logistics sourcing spectrum**(Source: Gattorna, 1998, p.431)



**Legend :**

**————→ Physical flows**

**←- - - -> Information flows----- Intermediation**

**Figure 2.9: The 4PL as part of the logistics engineering process**

(Sourced: Fulconis et al., 2006, p.73).

### **2.5.3 Benefits of 4PL**

According to the research of Win (2008) on the beverage industry, the use of a 4PL has added value to the client businesses. This has been achieved mainly through improved inventory turnover, and reduced inventory investment relative to annual sales and value chain integration was found to be another major benefit of adopting 4PL.

Parashkevova (2007) indicated that, since 4PL providers focus on management of the whole logistics chain, major improvements can be made by 4PL users in terms of quality of services and growth in their income due to increasing customer satisfaction. The following figures prove his statement:

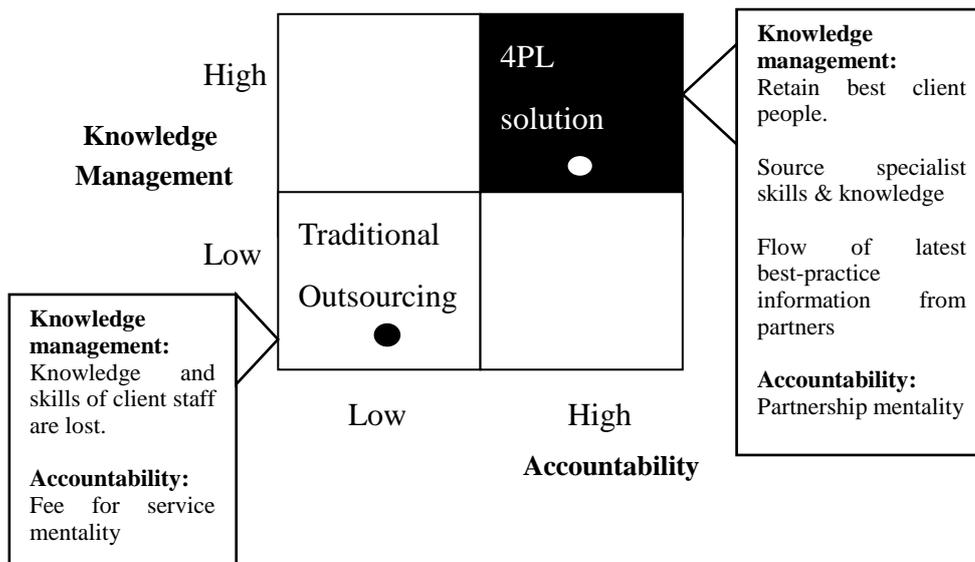
- The operational cost might drop by 15% due to increased operative effectiveness, in turn, the synchronisation of activities and the flow of information and technology among the participants in the logistics chain leads to lower operative costs.
- Variable capital reduction by up to 30% can be achieved through effective inventory management, in turn, adoption of advanced technologies for order

management and shipment tracking in the logistics channels minimising the necessary stock level.

- Reduction in fixed costs is also one of the fruits of passing the physical assets to 4PL providers, as they will utilise it more effectively, and, as a clear result, 4PL users will get the opportunity to release capital for other, more critical and/or profitable areas, such as production, R&D, and the like.

4PL is normally established as a joint venture or long-term contract between primary clients and at least one other partner. Compared with 3PL, 4PL tends to provide services to fewer primary clients at its beginning stage, which is, for the businesses, where their capital for setting up comes from. At a later stage, a few other clients might be served in the same or related industries. Due to 4PL providers' unique composition, Gattorna (1998) claimed that, besides the traditional outsourcing benefits, 4PL providers also enable their primary clients to retain corporate supply chain knowledge and accountability, as shown in Figure 2.10.

*“Knowledge management is defined as bringing together and effectively sharing knowledge capital among identified stakeholders. Accountability is defined as taking responsibility for achieving desired performance or outcome”* (Gattorna, 1998, p.348).

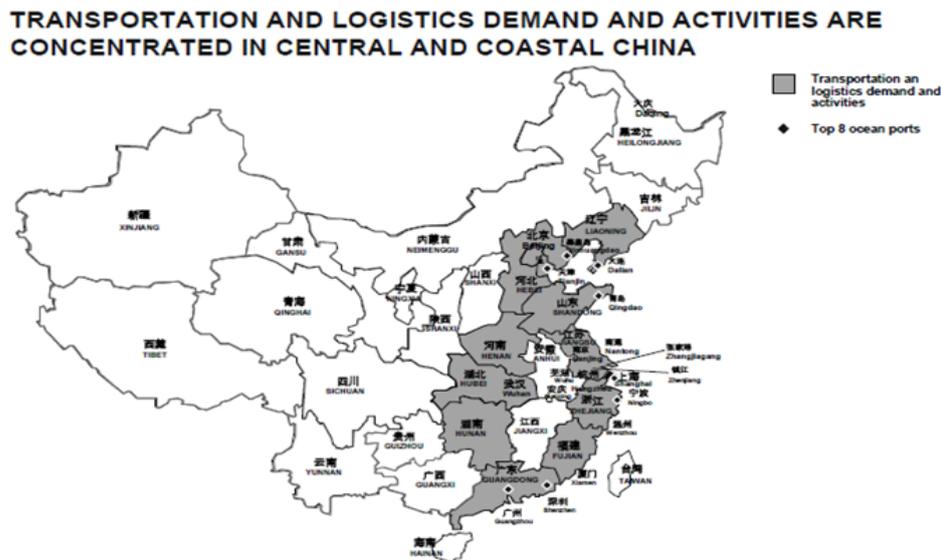


**Figure 2.10: Knowledge management and accountability** (Source: Gattorna, 1998, p.438).

## 2.6. CURRENT SITUATION OF LOGISTICS OUTSOURCING IN CHINA

Despite the recent global economic downturn and financial crisis, China has remained one of the most dynamic economies in the world, and officially passed Japan in the second quarter of 2010 to become the world's second largest economy, just behind the United States (Barboza, 2010). Though China has reached this ranking, it is still a Communist country led by the Chinese Communist Party, so, undoubtedly, it has many differences from other, capitalist countries in terms of its national economic system. Still, despite the differences, because of her fast economic expansion, cheaper labour force, relatively favorable terms for foreign investment, etc, a steady stream of multinational companies have shifted much of their sourcing and manufacturing to China, which, probably, has been one of the most noticeable contributors to China's economic miracle. China's 3PL industry was born and is growing up under the conditions of such a boosted economic environment. It has not been purely a bright side. Reid (2007) points out that China's huge territory presents

both enormous potential and immense challenges for logistics companies operating within its boundaries. Indeed, transport infrastructure and existing logistics facilities simply could not cope with the fast economic development in some regions of China; regions along the Eastern coast have been doing much better than the rest of the country in terms of facilitating logistics operations, and this has been due to heavily imbalanced financial investment according to the central state government's decisions (Jiang & Prater, 2002) and this is shown in Figure 2.11. The exceptionally positive economic background has been spurring the growth of China's 3PL industry. In the following sections, scholars' and practitioners' ideas of what the major challenges and drivers of the development of China's 3PL industry will be thoroughly discussed.



**Figure 2.11: Imbalanced transportation development of China**

(Source: Hertzell, 2001, p.4).

### 2.6.1 Challenges faced by China's 3PL industry

Though the cradle of China's 3PL industry was a fast-growing economic environment, it is still relatively new, and the learning curve for both users and providers is steep (Langley, Dort, Ross, Topp, Sykes, Strata & Dengel, 2006). Rahman & Wu (2011) even claims that China's 3PL industry is still in its infancy and that its current

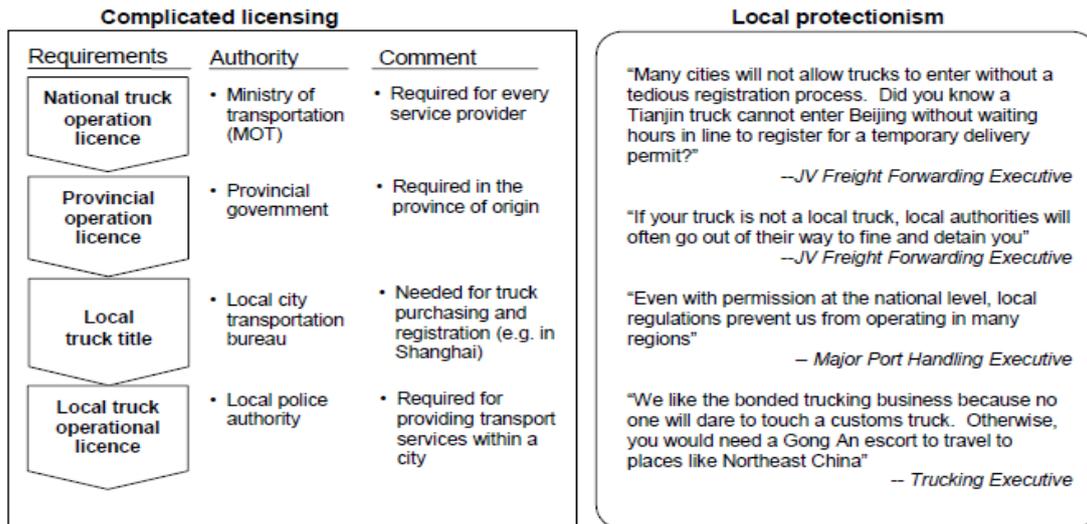
logistics infrastructure is inadequate to meet the increasing demands of both domestic and foreign customers. Hong, Chin & Liu (2004) found that China's 3PL industry was considerably underperforming compared with that of developed countries in terms of cost effective performance. Moreover, its operational efficiency was lower, mainly due to the slow adaptation of state-owned enterprise to a market-based economy. These issues are reflected, perhaps obviously, by China's logistics expenditure as a percentage of its GDP when compared with that of other, developed countries. According to Zhou, Min, Xu & Cao (2008), the total logistics expenditure in China accounted for 21.5% of its GDP in 2002, whereas that of the USA comprised of a mere 9.3% of its GDP in the same period, and if this negative trend does not stop, it will definitely jeopardise China's key economic development contributor, that is, low labor costs, and thereby jeopardise its current economic status.

Langley et al., (2006) discovered that there were no distribution networks available with country-wide coverage in China, and that IT systems were not reliable enough to support more advanced logistics activities such as cross-dockings, foreshadowing Zhou et al., (2008) findings that, compared with 3PL providers in the United States, those in China tend to focus on basic service offerings such as port management, transportation, and warehousing rather than playing the role of integrator in the logistics chain. This offering of limited services will negatively affect China's 3PL providers' sales and subsequent revenue growth opportunities. Therefore, it is not surprising that Wang et al., (2006) found that due to the booming economy, new services and quality standards have been requested by more and more Chinese 3PL users, they unfortunately still cannot find 3PL providers that can provide all the requested services at a high quality, even when they are willing to pay extra. Besides this, Yan, Wang & Sun (2006) found that 3PL service functions are highly simplified in China compared to those in Singapore and Malaysia.

Lau et al., (2006) discovered that local protective regulation is another major barrier

to the logistics outsourcing industry in China, leading to increased logistics costs and, thus, to reduced profit margins. More importantly, this will also limit the choices of 3PL users in selecting their desired service providers. Taking the trucking sector of China as an example, many cities do not allow trucks from different cities to enter without a series of tedious registration processes. Also, local authorities tend to hinder the flow of goods between provinces or regions, truly jeopardising the development of a modern trucking network. Moreover, toll roads impose a huge burden on trucking, amounting to as much as 20% of the trucking cost in China (Hertzell, 2001). For detailed local protectionism, refer to Figure 2.12.

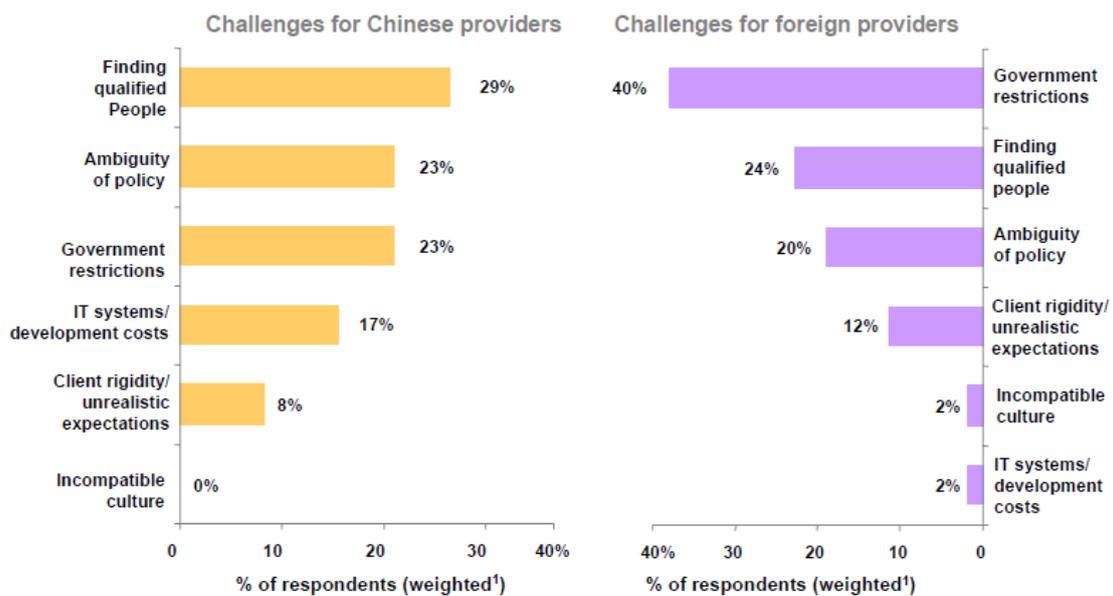
Due to China's Communist political system, a considerable number of state owned enterprises (SOE) exist. This special economic phenomenon has caused the growth of the logistics outsourcing industry to drag in objective terms. This is because, traditionally, the majority of SOEs handle their logistics activities in-house, and are the least likely enterprises to use 3PL services, as they have the assets and people to perform logistics in-house. Moreover, they lack experience even in managing vendors outside the organisation, and therefore certainly do not have much idea of the benefits of outsourcing. *“Cracking the SOE market will likely be difficult, and could prove to be a critical barrier to the growth of outsourcing, given the size and reach of these companies in the Chinese market”* (Huang et al., 2002, p.5). As a manager of a 3PL business commented on the SOE sector in China in an interview by Kadar & Huang (2002, p.11): *“What do they do with thousands of employees and tens of millions of logistics assets if logistics services are outsourced?”*



**Figure 2.12: Trucking suffers from complicated licensing and local protectionism**

(Source: Hertzell, 2001, p.7).

Last but not the least, Wang et al., (2006) states that there is shortage of qualified logistics personnel in China's 3PL industry. Similarly, Lau et al., (2006) says that there is a lack of logistics training programs in China. Furthermore, according to Kadar et al., (2002) investigation, this phenomenon is not only ranked by China's domestic 3PL providers as the top challenge, but also substantially troubles foreign 3PL providers who offer logistics services in China, as shown in Figure 2.13.



**Figure 2.13: Challenges for Chinese domestic and foreign 3PL service providers.**

(Source: Kadar et al., 2002, p.25).

## 2.6.2 Factors pushing the growth of China's 3PL industry

Many of the challenges discussed above also reveal the enormous potential for China's logistics outsourcing industry to excel. Lau et al., (2006) discovered that government initiatives, entry to the WTO, and economic reform are the three major stimulators of the growth of China's logistics outsourcing industry, as shown in Figure 2.14.

Key factors	Descriptions	Results
Government initiatives	Investment in logistics infrastructure	Has encouraged domestic companies to outsource a greater percentage of their logistics needs
Entry to WTO	High-quality foreign 3PL providers entering Chinese logistics market Relaxation of regulations Increased competition	Has enabled companies to outsource more functions Has encouraged more companies to exploit outsourcing potential
Economic reform and development	Enlargement of consumer market	Has increased demand for logistics solution
Consolidation in industries and emergence of national chains	Creation of large and more complex players	Has increased need for transportation and logistics solutions

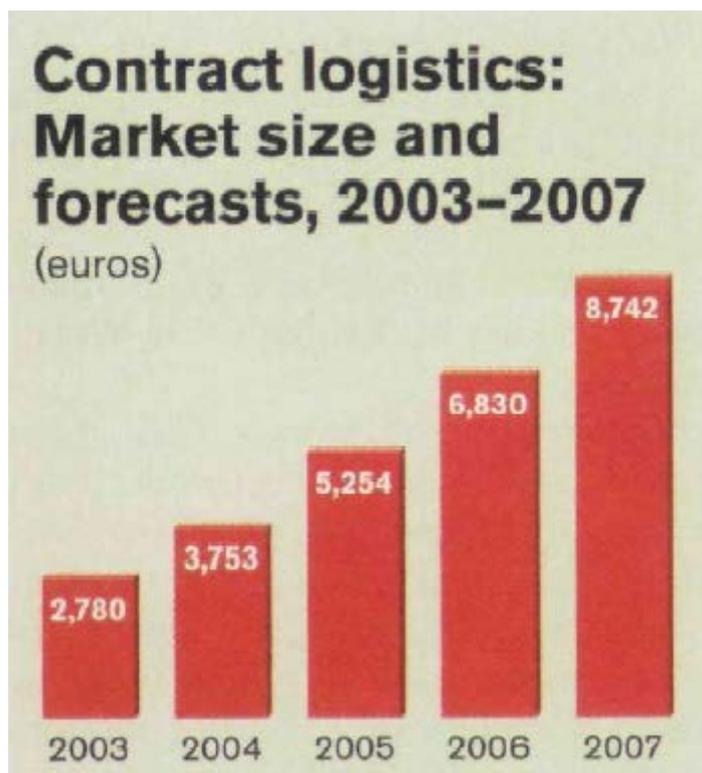
**Figure 2.14: Key factors stimulating the growth of outsourcing in China** (Source: Lau et al., 2006, p.780).

Wang et al., (2003a) said that China possesses the essential requirements for developing effective logistics and distribution systems. In fact, over the past few years, the Chinese government has been paying more and more attention to the development of logistics infrastructure as one of its strategic goals, for example, by establishing national logistics centres and large logistics enterprises, and key government ministries are encouraging domestic businesses to develop partnerships with 3PL providers and to outsource a large part of their logistics activities, while also reducing the hindrances to foreign 3PL providers entering China (Huang et al., 2002).

China's accession to the WTO has been referred to as another stimulator for the

growth of China's 3PL industry by a few scholars. Lin (2007) argues that allowing foreign logistics businesses to operate in China will boost the growth of its logistics industry. Huang et al., (2002) also thinks that entry into the WTO is a critical factor, as it makes China committed to greater liberalisation in domestic logistics.

In fact, though the 3PL industry is in its infancy, it has been reported to be growing by 25% per year, exceeding entire North America's 3PL industry, which has an annual growth of 10% to 15%, and that of the rest of the world, which has an annual growth rate of 5% to 10%. In addition, according to Mercer's survey, though only 22% of the total logistics expenditure was on 3PL in China, Mercer expects this figure to jump to 50% or 60% in 3 to 5 years (Huang et al., 2002). Kerr (2005) forecasts the positive growth of China's 3PL industry as shown in Figure 2.15.



**Figure 2.15: Chinese contract logistics: market size and forecasts, 2003-2007**

(Source: Kerr, 2005, p.52).

In short, despite all the negative factors discussed above, from a long-term point of

view, if Chinese economic reforms continue, China's logistics industry will enter a new era (Wang et al., 2003a) and businesses will have to take it as the right option for this era. As Lau et al., (2006) states, outsourcing is "*one of the most effective business strategies for organizations in China to achieve cost effective performance and long-term success*" (p.790).

## **2.7. CONCLUSION**

In this chapter, a wide range of material within logistics literature has been reviewed, from basic definitions of logistics to reasons why it is considered such an effective weapon for businesses in the ever-intense competitive market, and readers have been given a brief idea of why it only took a few decades for logistics to become a vital business function and, by now, an oft-discussed topic in the boardroom, having come this far from having a simple and less important warehouse role. Moreover, discussions on 3PL and 4PL presented the reasons why they have been adopted by more and more users, and also the barriers that keep users from them. In the final part, China, as the hottest economic entity in the world, could not be excluded from discussion. Its special economic and political system includes both negative and positive factors for the development of the logistics outsourcing industry, which were placed alongside external factors such as entry into the WTO and the increase of foreign investment.

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **3.1. INTRODUCTION**

This chapter discusses the research paradigms and techniques adopted for collection and analysis of both primary and secondary data. Section 3.2 argues why qualitative as a paradigm is more appropriate than quantitative in this thesis. And 3.3 is a research method selection process that explains the reasons why this case study was chosen, and further discussed is as to why multiple case study method is better than a single case one. Section 3.4 and 3.5 introduce the techniques adopted for data collection and analysis. Then 3.6 outlines the ethical and moral disciplines that researcher needs to bear in mind during the interaction with informants.

### **3.2. RESEARCH PARADIGM**

Paradigm refers to “*the progress of scientific practice based on people’s philosophies and assumptions about the world and the name of knowledge: in this context, about how research should be conducted*” (Collis & Hussey, 2003, p.76). Generally speaking, it means the framework and direction of methods and techniques that would be adopted for the research activities. As Collis et al., (2003) stated that there are two types of research paradigms or philosophies, namely quantitative (positivistic) and qualitative (phenomenological). The differences between the two types of researches are shown in Table 3.1.

**Table 3.1: Features of the two main paradigms**

Positivistic paradigm	Phenomenological paradigm
Tends to produce quantitative data	Tends to produce qualitative data
Uses large sample	Uses small samples
Concerned with hypothesis testing	Concerned with generating theories
Data is highly specific and precise	Data is rich and subjective
The location is artificial	The location is natural
Reliability is high	Reliability is low
Validity is low	Validity is high
Generalises from sample to population	Generalises from one setting to another

(Source: Collis et al., 2003, p.55).

In this thesis, qualitative (or phenomenological) was selected as the framework of the research method, as Remenyi, Williams, Money & Swartz (1998) argued that most of, though not all, business and management researches focus on people and organisation. Though quantitative (positivistic) paradigm has its own value in fields such as physical and life science, it is necessary to go beyond quantitative and rather use qualitative approach to cope with the problems of people and organisation. Plus the qualitative approach often starts with a loosely defined research problem and as the study progresses the researcher gains better understanding of the studied phenomenon, increasingly able to ask specific questions. Also, with an inductive logic throughout a theory was developed from the observation of empirical reality and general inferences were induced from particular instances (Collis et al., 2003, p.15).

Moreover, exploratory is the purpose of this thesis, as Collis et al., (2003) indicated that there are very few earlier studies which can be referred for information about issues and problems. The aim of these types of studies is to look for patterns ideas and hypotheses, rather than testing or confirming the hypotheses.

The purpose of this research project is to discover how Chinese white goods

manufacturers create value, reduce total operation costs through the use of LSPs within domestic scope, and how this in turn affects the service level to end customers. Hence this research will be focused on the interactions between the two parties (white goods manufacturers and LSPs). According to the writer's personal observation, no similar research has been done on contract logistics performance of China's white goods industry previously, apart from some less relevant and more generalized topics. Therefore, this is a virgin research in this field without any relevant supportive data and experience to borrow from. So the purpose of this research is exploratory, as Collis et al., (2003) indicated that exploratory type of approach is adopted when there are very few or no earlier studies to which we can refer for information about the issue or problem. The aim of this type of study is to look for patterns, ideas or hypotheses, rather than testing or confirming the hypotheses.

### **3.3. RESEARCH METHODS**

Junqueira (2010) indicated that selection of the most suitable method for answering the research questions is a critical aspect of the research. Argued "*the selection of the most suitable method for answering the research question is a critical aspect of any research*" (p.57). It is true, that research method is the backbone to any research projects, regardless its size, nature, time length etc., because it offers a series of theatrical instructions to data collection and analysis. An appropriate research method is always deemed critical, especially for those business investment decision researches, because a well structured research procedure is most likely to increase accuracy, and more importantly often leads to a better business decision. The selection and justification of the right research method will be explored and discussed in this chapter.

### 3.3.1 Case study.

According to Yin (1994), experiment, survey, archival analysis, history, case study are the five major methods used in the field of qualitative research; and there are three preconditions which are used as guidelines to select the most suitable one out of the five, namely:

- *“the type of research question posed,*
- *the extent of control an investigator has over actual behaviour events,*
- *the degree of focus on contemporary as opposed to historical events” (p.4).*

Surveys’ and archival methods are out of the shortlist, simply because these methods are more appropriate for *who, what, where, how many, how much* topics rather than the *how* question, since this particular research project is more about *how* rather than others. In contrast, as Yin (1994) stated *how* and *why* questions are more likely to lead to the use of case studies, histories, and experiments as the preferred research methods, so now the pool has been narrowed down to case study, experiments and histories. Comparisons are made between three methods respectively according to Yin (1994) are:

- Histories are the preferred one when there is absolutely no access or control on a past event, and a perfect tool in dealing with dead past, such as there is no relevant people alive to get data or information from, therefore primary documents, secondary data and even cultural and physical artefacts become the main source of evidence. While in this research project, data and information of the correlation between LSPs and Chinese white goods manufacturers is a contemporary event and at an ongoing basis.
- Experiments are generally used when researchers can manipulate behaviour directly, precisely, and systematically, however, it is almost impossible for the writer to manipulate all the relevant people’s behaviour and certain business

processes, whether those targeted Chinese white goods manufacturers or those logistics service providers.

- Case study has a distinctive advantage, when how and why questions are being asked about a contemporary set of events over which the researcher has little or no control. Compared with the above two methods case study suits this research more appropriately, since “how” the manufacturers create value through utilisation of contract logistics is the centre of the research, plus this is a ongoing phenomenon, or in another word “contemporary”, in addition, the writer does have certain accesses to the targeted informants, while with no leverage.

Stuart, McCutcheon, Handfield, McLachlin & Samson (2002) claimed case study as an appropriate research method to map the field of supply chain management related issues, as they allow identification and description of critical variables. Collis et al., (2003) thought case study is suitable in areas where there is a deficient body of knowledge, which is exactly what this research is, since it’s the first research to be carried out in this field the knowledge body is deficient and unexplored. Last but not the least, as Rowley (2002) claimed case study as a research strategy often emerges as an obvious option for students and other new researchers who are seeking to undertake a modest scale research project based on their workplace or the comparison of a limited number of organisations.

### **3.3.2 Single or multiple cases**

Case study includes single or multiple cases and according to Yin (1994) both single and multiple designs remains within the same methodological framework. However, multiple case study has clear advantages in comparison with single case study, as “*the evidence from multiple cases is often considered more compelling, and the overall study is therefore regarded as being more robust*” (p.45). Similarly Thietart (2001) also argued that, like quantitative research the confidence of results tends to increase

when sample size increases. Yet, as an obvious consequence, conducting a multiple case study may require more time and resources for researcher/s. Yin (2009) also suggested that multiple case design may be preferred over single case design, if researcher has sufficient time and resources, he/she can do a “two cases” study, and thus the chances of doing a good case study is higher than using a single case design. Moreover, having more than two cases should be the goal in order to fight against criticism of artifactual conditions surrounding the case. After careful consideration between these two basic case study methods, the writer decided to go with multiple case study, since making sure result accuracy is the top priority.

### **3.3.3 Case selection**

Like statistical sampling, case selection is also a critical part for case study research. Cases selected are neither a random selection, nor the selection of the easiest and accessible ones. The case selection process must incorporate with the specific reasons why the researcher needs the particular cases (Yin, 1994). In this thesis, Chinese white goods manufacturers are the study objects, and the study focuses on the cost reduction, value creation and customer satisfaction level the manufacturers are pursuing through utilisation of LSPs. However, there are thousands of hundreds of them existing in China, which vary from each other in terms of size, turnover, nature of enterprises, specialties etc. According to Thomas (2004) when multiple case study is considered desirable, a rule of thumb suggests that between four to ten cases are usually sufficient. And as Ghauri & Gronhaug (2010) suggested when studying a complex issue, it's better to investigate bigger firms, because they experience complex problems and have expertise in-house that can provide us with in-depth information on the particular issue. Therefore, the writer has selected, Company A , Company D, Company B and Company C, four Chinese white goods manufacturers, as these four are not only large in scale, but also the pioneers in logistics operation reengineering. These four manufacturers are relatively easier to

get access into in terms of necessary data and information gathering for case study analysis. Furthermore, they are all owned collectively or privately, and no state-owned manufacturers were selected, as they are government monopoly businesses, in which logistics operation might be heavily influenced by certain government authorities rather than market, the “invisible hand”. And lastly, all four are 100% Chinese owned white goods manufacturers.

### **3.4. DATA COLLECTION METHODS**

Yin (1994) identified that the use of multiple sources of evidence is a critical principle for data collection in case studies, and any or all methods of data collection or data analysis can be used, although certain techniques are used more often than others. Likewise according to Collis et al., (2003) the best way to gain data for case study approach is usually to combine data collection methods such as archive searching, interviews, questionnaires, observations etc., and the evidence can be either quantitative (numbers) or qualitative (words), or combination of both. Due to the financial and time constraints, onsite observation is an inapplicable option since the researcher is based in New Zealand, while others such as interviews and archive researching can be done through correspondence via telephone, internet, mails etc. So interviewing was adopted as the primary data collection method, and archiving was adopted as the secondary data collection method.

#### **3.4.1 Interview and archive**

Saunders, Lewis & Thornhill (2009) indicated that interview is a purposeful conversation between researcher and the informants, through which researcher is likely to gain better understanding on the targeted event. Yin (1994) stated “*one of the most important sources of case study information is the interview*” (p.84), this is

because most case studies are about human activities, these activities should be reported and interpreted through the eyes of specific interviewees. Interviewees can also provide shortcuts to the prior history of the situation, helping researcher to identify other valuable information that wasn't thought before this interview. Focused interview is chosen since it combined the advantages of within short period of time and conversational manner, right into the targeted areas. More importantly, all the interviewees are busy logistics managers, so a compact process is indeed more appropriate, therefore 30 minutes to 1 hour of time length is designated for each interview in this thesis. Collis et al., (2003) also said interview may be conducted face-to-face, vice-to-vice or screen-to-screen and so on, so as the writer is based in New Zealand, a vice-to-vice of focused interview method would be ideal. Please refer to appendix two for detailed information of the interview questions and introductory letter for each interviewee.

Documentation was originally the chosen secondary data collection method, while due to the difficulties of getting business letters, memoranda, annual reports and the like from these businesses the writer picked up archive as a substitute, so secondary data will be mainly collected from those manufacturers' official websites, and other accessible materials such as new papers, academic journals and the like.

### **3.5. DATA ANALYSIS METHODS**

As multiple case study was decided, Collis et al., (2003) stated there are choices between within-case analysis and cross-case analysis. Within-case analysis makes researchers totally familiar with the targeted case, and enables to build up separate descriptions of each case, while cross-case analysis offers the opportunity to identify the similarities and differences between targeted cases. In this paper, both within-case and cross-case were adopted as the main frame for the data analysis, as

within-case helps to dissect and display the individual selected Chinese white goods manufacturer's logistics activities, and how it in turn influences its value creation in terms of customer satisfaction and profitability. Subsequently, cross-case analysis was conducted based on the findings of within-case analysis, and through that the similarities and differences among the targeted manufacturers will appear, and a thorough discussion and comparison would reveal to what extent logistic outsourcing has assisted with their value creation both for their costumers and themselves.

In addition, content analysis was used as a support method beside within-case and cross-case. Content analysis focuses on the actual content of media, and determines the presence of certain words, phrases or sentences within texts, and to quantify this presence in an objective manner. Texts can be broadly classified as books, interviews, newspaper titles, historical documents, and advertisings. For example, in the annual report speech of a white goods manufacturer, the researcher might measure the emphasis given to "logistics" concerns by the number of sentences mentioning them as a proportion of the total sentences in the speech, in order to interpret how much emphasis does executive have to the matter of logistics. There are a few benefits of using content analysis, while there are two obvious ones within this research namely: flexible, creative and easy for a beginner researcher to undertake; and it can simplify very large documents into enumerative information.

### **3.6. ETHICAL AND CONFIDENTIAL ISSUES**

Ghauri et al., (2010) stated that *ethics are moral principles and values that influence the way a researcher or a group of researchers conduct their research activities.* Ethics in business research generally means to make sure no one gets harmed or/and suffer from the entire research process, while in fact unethical activities are pervasive which include: violating nondisclosure agreement, breaking participant confidentiality,

misrepresenting results, deceiving people, invoicing irregularities, avoiding legal liability etc (Cooper & Schindler, 2006). Yet, unlike any lawful regulations and acts, it is kind of difficult to put ethics into strict and explicit writing documentations, because the standards of ethics vary from people to people, and even from university to university. On the other hand, some of the ethical issues concerned don't have clear boundary of right and wrong, for instance, everyone would see cheating as a very unethical behavior, while there will inevitably be different opinions as to what actually constitutes cheating.

Some researchers often believe that if they are not doing anything illegal, it is morally acceptable (*Ghauri et al., 2010, p.20*). And researchers also have problems in deciding whether to carry on with research while ignoring ethical issues, this is mainly because it is difficult, and time consuming to identify what is ethical within a specific research, or even ethics consideration does not fit into their research schedules. Remenyi et al., (1998) pointed out ethics, like other branches of philosophy, is a subject where very wide differences of opinion exist between competent authorities). Therefore personal (it refers to the writer in this research project) integrity and disciplines are the vital aspect of ethics in the entire journey of this thesis.

As this research is focused on a contemporary phenomenon, data or information collected may be commercially sensitive or confidential to some businesses. As stated, a common principle to offer confidentiality at the beginning of the research helps in gaining trust and encouraging the participants to speak openly and honestly (Simons, 2009). Therefore, all the participants of this research will be getting an introductory letter which states the purpose of this research and how the information will be used and managed, in this case, only authorised people can get access to the final data, who are the writer himself and his supervisor/s; and data will be only used within this academic research, with absolutely no commercial purpose involved.

Anonymisation being a common principle in research reporting helps anonymise individuals and offer them some protection of privacy (Simons, 2009). So for the reason of privacy, all the participants' names and job titles will be omitted in the final report.

### **3.7. CONCLUSION**

This chapter discussed the research techniques and methods that have guided this research endeavor. The objective of this research is to find out the correlation between contract logistics and business profitability and customer service. A multiple case research method was selected and data was drawn from both primary and secondary sources. Primary data was collected from survey and focused interview from the selected four manufacturers, while secondary data was collected from wide range of sources, which included academic literature, internet, magazines and etc. Analysis of collected data is explained in the following fourth and fifth chapters.

## **CHAPTER 4: WITHIN-CASE STUDY**

### **4.1. INTRODUCTION**

In order to understand the logistics outsourcing strategy of the selected Chinese white goods manufacturers, within-case study method was adapted. This chapter provides a detailed explanation of the results obtained by the Within-case study method.

### **4.2. TRENDS OF LOGISTICS PERFORMANCE OF CHINESE WHITE GOODS INDUSTRY IN THE PAST FEW DECADES.**

Just within 30 years' development, China's white goods industry has achieved a stunning result. Now, China has already made her name as the first nation and world factory of white goods, because majority of white goods products on the international markets are made from China, and more persuasively, a few of China's domestic brands are growing up to be front runners internationally such as , Little Swan, Midea etc. In addition, China's domestic white goods market has also been growing quite fast, in response to the booming domestic demand, which has directly caused a fast development of China's domestic white goods logistic, and lead to a new era of higher performance. Certainly, this was always not the case as China's white goods logistics development also went through some hard time. China's white goods logistics can be classified into three stages: First stage refers to the time prior of China's opening and economic reform police. In that time, under planned economic system white goods manufacturers were only responsible for production according to state government's schedule, and state-owned transport teams and department stores took care of the distribution and sales sides of the business. Surely, those manufacturers were equipped with fleets, warehouses for basic activities such as raw material purchases, storage for the final products etc. This was the very first stage of China's domestic

white goods logistics, which was basic and low productive. Second stage was started not long before the opening and economic reform policy which took in place in 1989. Due to the unacceptable costs and low productive logistics operation from the national owned distribution system, the domestic white goods market has grown up into a more demanding and mature stage, and white goods industry has gradually moved into a fast development age, while due to the production shortage and increased market demand, seller's market was the absolutely mainstream trend during the second stage, and the old unproductive and inefficient state-owned logistics system was no longer capable to cope with such a booming demand environment. Therefore, some of the big manufacturers began to build up their own distribution channels, sale and marketing networks. So during the time of mid-80s and later 90s of last century, majority of China's white goods manufacturers owned big logistics capacity in-houses, few of them even equipped with exclusive railway lines in major routes, and bigger the better logistics concept became the dominant thought among top managements. However logistics was treated purely as a supportive and distribution tube to feed the hungry markets, and wasn't fostered and used as a competitive and strategic weapon, so this in-house logistics revolution wasn't so successful, as production and efficiency still remained low. For instance, though excessive in-house logistics capacity enabled its mission of feeding the hungry market, a big portion of white goods products are seasonal, such as air-conditioners, electric fans, fridges and the like are heavily in demand during summer and not so in winter, therefore in-house logistics resource wasn't maximally utilized all year around, however staff wage, facilities maintenance and other related costs still need to be paid out continuously even during the most slack seasons. Therefore, logistics performance during the second stage was still comparatively less productive and inefficient. The third stage started from later 90s of last century to current, after more than 10 years of fast development, the entire white goods industry got into a "profit ice age", sellers market has gone, buyers era has arrived. This is because firstly on the demand side, customers' bargaining power is getting stronger and more rational (in the old days particularly before 90s of 20<sup>th</sup>

century, white goods such as TV set, fridges and the like which were the symbol of richness and social status for ordinary Chinese families, while with the booming economics which caused fast popularization of white goods at later of 90s, and the halo on white goods has also gone). Under such circumstance price and quality are no longer order winners but rather order qualifiers, at the same time, service level is now emerging as another vital factor of winning criteria; on the supply side, pressure has been also fierce, such as overly exceeded production capabilities, increased gas and raw material costs, labour costs, and competition between not only domestic brands, but also overseas brands and etc. All of these factors have squeezed its profits right down to the bottom.

Pressure is a motivation, cruel reality has forced these manufacturers eagerly to pull themselves out from this “ice age”. As the 1<sup>st</sup> profit source (natural resources and technologies) and 2<sup>nd</sup> profits sources (human resource) had been reached their fullest potentials, now business decision makers have turned their attention into logistics the so-called ‘Third Profit Source’ (TPS). Logistics as a relatively new management skill concept, has been widely recognised as a new way of cost reduction and profit source. In addition, as mentioned earlier in 2<sup>nd</sup> chapter, the total logistics expenditure in China accounted for 21.5% of its GDP, whereas that of the USA comprised of a mere 9.3 % of its GDP in the same period (evaluating the comparative efficiency of Chinese third-party logistics providers using data envelopment analysis). So there is a precious chance for Chinese businesses to grab this hidden fortune through appropriate logistics management, and in fact, there are a few white goods manufacturers who have already taken advantage of it, especially through different logistics outsourcing strategies, which are discussed and analysed in the following:

## **4.3. COMPANY A**

### **4.3.1 Background of Company A**

Company A (2011) was founded in 1984, originally a small collective plant on the edge of bankruptcy. Over the past 26 years, through four appropriate development strategies, namely, brand strategy (1984--1991), multiple strategy (1992--1998) and international management strategy (1999--2004), and global brand building strategy (2005-present) it has grown into an international group. This company has more than 70,000 employees, and realises a turnover of 135.7 billion Yuan (equivalent to 22.6 billion US dollars), produces a wide range of white goods appliances in 86 categories and 13,000 specifications, and exports to 160 countries worldwide. In 2010, it gained the largest white goods' market share in the world (6.1%).

### **4.3.2 Company A's style - in-house logistics**

As an old saying goes "Rome wasn't built in one day", company A's success wasn't a coincident and without good reasons, it was the first one of logistics management in China, the CEO of Company A who was the first man who realised logistics as a key to businesses' success in China's white goods industry, since 1999 he implemented series of major business reengineering to facilitate and support this TPS, which included three areas:

Firstly, logistics reorganization which consists three unifies:

- Unified purchase, prior to 1999 purchasing was conducted by different department and manufacture facility itself. Since the unifying purchase policy took place in 1999, entire Company A corporation's purchase is made by the headquarter, which has lead to 5% decrease in material cost annually,
- Unified warehousing, Company A has built two fully automatic logistics centres, which not only saved a 200,000 square meters of floor area, but also reduced 90%

of idle materials

- Unified delivery, 16,000 vehicles nationwide which are all under command of unified procedure of Company A .

Secondly, SCM integration which also consists two parts:

- Through interior integrated SCM the ordering cycle time reduced to less than an hour from an averaged 7 days previously.
- Through exterior integration (here is more focused on upper stream supply chain), reduced both domestics and international suppliers from 2,366 down to selected 700, and majority of which are renowned corporations, more importantly it has reduced order responding time from 36 days to 10 days.

Thirdly, three Just-in-time's (JIT): via procurement, internal delivery and external logistics

- JIT Procurement - though the exterior supply chain integration, which transformed suppliers from suppliers to business partners, from business to mutual benefit, and from transaction relation to strategic partner relation. And relying on Company A's advanced logistics information system, it ideally achieved the combination between JIT and unified purchasing.
- JIT internal delivery, the two fully automatic warehouses changed the warehouses function from storage into relay-type delivery centres, which enables a capacity of delivering materials to any assembling point in 4 hours.
- JIT external logistics, Company A devotes a great effort to the development of 3PL, CEO of Company A established Company A Logistics as a subsidiary company, which is managed by a vice CEO, and directly report to CEO, and unify managing LSPs of it. Company A Logistics devotes great effort to the usage of the 3PL, plus use of advanced technologies such as GPS technology, bar code technology, allocation of any products to the first line cities in 8 hours, to second line cities in 24 hours and any place national wide within 4 days can be achieved.

This also being called “zero-distance service”.

According to the interview, there are a few strategic and realistic reasons that drive Company A to build up its own logistics subsidiary unit in-house and the reasons are summarised below.

Firstly, Company A sees logistics operations as its core competence and source of competitive advantage, so keeping it in-house is easier for top manager’s monitoring and controlling purposes. Chen, Lin, Li & Chen (2004) claimed “*One hand grasps customer demand, and the other hand grasps the global supply chain that can satisfy customer demand. The ability to integrate these two is our core competency*” (p.16).

Then, there are certain boundaries of logistic outsourcing activities regardless of traditional or modern logistics. Business confidential information leakage might occur if LSP’s take the responsibility of entire Company A’s logistics activities.

Thirdly, Company A has been trying to turn herself into a service oriented business rather than a pure white goods manufacturer. At present undoubtedly it is still a manufacture oriented business, therefore it can’t just simply copy what other international corporations did - contract all the manufacturing and logistics activities out, as was the case with Sony. Plus in 1999, the year of revolution of Company A’s logistics, China’s contract logistics industry was still in the infant stage, and qualified, matured and large-scaled domestic LSPs were hard to find Back then foreign LSPs such as DHL, Maersk logistics were not allowed to do business in China (foreign logistics providers were officially permitted to get into in China in 2001 after China became a member of WTO).

In addition, keeping logistics function in-house is a critical part of Company A’s self-development program. Before 1999, there were no specialised logistics experts

in-house, so if it didn't keep its logistics in-house, there would be no place to foster its own logisticians, logistics experiences and culture.

Last but not least, as a social responsible business, Company A was asked to share some unemployment pressure by the local government. And in fact, in-house logistics did create a few job opportunities for the local community.

### **4.3.3 The Company A logistics phenomenon**

As discussed above, there were a few sound reasons that pushed Company A to take care of its own logistics function. However based on the information gathered from the interviewees, the writer found that Company A Logistics was heavily utilising LSPs, while in a unique way. In fact, Company A Logistics itself is a hybrid of 3PL provider and user, as explained below:

Firstly, CEO of Company A expected Company A Logistics could grow up to be a LSP corporation, and become a profit growth point. And achieves three “one-thirds”, namely, one-third serves Company A itself, one-third serves other domestic businesses within China, one-third serves international businesses within a global scope. And in reality, Company A Logistics is acting exactly like a LSP, and has been providing logistics service to businesses such as: Amway China, Lebaishi, COFCO, Unify Cop, General Electric China, HP China, Asus China and etc. Company A is responsible for their products' storage and distribution, under its nationwide transportation, warehouse network and superior IS, and in return further enhances its economic scale advantage.

Secondly, there are a few evidences that proved Company A Logistics is a huge fan of 3PL usage. As an interviewee said “We used to have over 200 trucks for our own logistics usage in the earlier 20<sup>th</sup> century, while nowadays there are over 16,000 trucks

and lorries running around on the roads nationwide for Company A Logistics, yet Company A owns none of them”. He also pointed out “there are 91 major D.C.s (Distribution Centre), 90 of them are leasing facilities, only one in Qingdao is fully owned by Company A”. While unlike the traditional meaning of logistics outsourcing, Company A actually assigned a logistics team to manage these D.C.'s, in order to keep their behaviors under unified instructions of Company A Logistics.

Thirdly, Company A logistics possesses the massive big and possibly the best logistics IS capacity among the entire China's white goods industry, such as LIS (logistics information system), GPS (global positioning system), GIS (geographic information system) for monitoring and facilitating its contract transporters to get to the right place on the right time; ERP (enterprise resource planning) and BPR (business process reengineering) to increase the efficiency of internal resource management; B2C (business-to-customer e-commerce) increase the convenience of end customers, B2B (business-to-business e-commerce) to smooth and integrate downstream business customers and etc, all of which plus in-house logistics experts' consultations enable Company A to provide an information platform to share information with its contract LSPs in a timely manner (Chen et al., 2004).

According to above discussion, from the writer's personal understanding Company A Logistics partly uses 3PL while based on the in-house logistics ideology, it's more obviously reflected in its downstream SC. In doing so, Company A Logistics not only keeps the core competence of its logistics operation in house, this case refers to its massive IS and logistics personnel, but also shifted majority of potential logistics related risks to other LSPs, such as natural disasters, increased gap prices and etc; reduced investment in fixed assets (16,000 vehicles and 90 leased NDCs could worth tens of millions of dollars).

## **4.4. COMPANY B AND COMPANY C CASES**

### **4.4.1 The background of Company B**

Company B was originally founded in 1958, it had designed and manufactured China's first automatic washing machine in 1978, and it was rewarded as the first famous brand in China's washing machine industry. Now there are more than 10,000 dedicated employees working for Company B in its Jiangsu Headquarter and other 33 subsidiary companies worldwide respectively. In the domestic market Company B developed as the largest domestic production of washing machines listed company, and has taken the first place nationwide in sales of washing machine for the past 11 years successively. Internationally it even has grown up to be the third biggest washing machine manufacturer in the world and one of the very few that can produce all kinds of automatic washers with either impeller, front-load and agitation types. It also passed the certification of the "Export Inspection- Free Approval", and has been exporting to over 80 countries and regions, especially, has entered into top market like the United States and Japan.

However with the arriving of the "profit ice age" on the China's white goods industry, Little Swan's profit margin had dropped substantially, though sales volume had been growing steadily specially in the washing machine sector. As the 1<sup>st</sup> and 2<sup>nd</sup> profit sources' potentials had been almost used up, so managing directors of Company B turned their attention to the 3<sup>rd</sup> profit source, and which not only existed in theory, in fact, logistics cost had been one of the major sales costs. According to an interviewee from Company B logistic related costs is around 1 billion RMB (equivalent to just over 0.6 billion USA dollars), which took up over 20% of the total sales costs, and took up more than 10% of total annual profits. In the last few years of the last century, the white goods industry has changed to buyers' market, and sharply

increased competitiveness, inventory level has gone up heavily accordingly which caused the entire logistics cost to go up.

#### **4.4.2 The background of Company C**

Company C was originally founded in 1984, which was one of the first manufacturers of refrigerators in China. Nowadays, after almost 3 decades of development and commitment, it employs more than 1,500 employees with an annual turnover of 2 billion RMB (equivalent to approximately 0.3 billion USA dollars), and the sales volume of Company C's fridge and air-conditioners has been among the highest in China over years. In particular, Company C's refrigerators have embraced the biggest market share in the past 10 years.

Through almost 2 decades of fast development, the original in-house logistics system is no longer capable of supporting the fast-growing sales network, especially during high demanding seasons for fridges and air-conditioners, which gradually becomes a bottleneck to the entire supply chain. As an interviewee said *“our people from logistics and transport sector are so afraid of summer, not because of the steaming hot weather, but because of the pressure from both top management and national wide Company C dealers, we simply don't have enough resource on hand to deliver loads of orders on time”*.

#### **4.4.3 The Birth of Attend Logistics**

Under the same pressure, both above companies were looking ways to release their logistics difficulties. In an inevitable accident, they both reached China's No.1 shipping business - COSCO (China Ocean Shipping Group Company) which was established in 1961. COSCO has grown up to be the world's leading Group

specializing in global shipping, and ranked the 327th in Fortune Global 500. Domestically COSCO has over 300 service providers across the country (COSCO Group, 2011).

Under such a condition, Attend Logistics Ltd was born in 2002, which is a joint LSP business by company B, C and COSCO, aimed at building up the biggest white goods logistics platform in China. Company B and C each possess 20% of share (it is worth mentioning that they traded in the supply of goods and existing logistics facilities for shares rather than traditional type of capital injection), and COSCO owns 60%.

Only after a year from when they handed out their in-house logistics to Attend, logistics performance indicators improved, as shown in table 4.1 below:

**Table 4.1: Performance differences before and after using LSP.**

Comparison items	Company B		Company C	
	Before outsourcing	After outsourcing	Before outsourcing	After outsourcing
Personnel	70	40	500	80
Fare	1	0.85	1	0.92
Storage cost	1	0.95	1	0.9
Transportation accuracy	95%	96%	96%	97%
General storage	1	1	1	0.8
Direct logistics costs	1	0.89	1	0.9

(Source: Company B interviewee, 2011).

While there were obvious benefits of utilising Attend to handle their logistics jointly, what company B and company C received is more profound and strategic than just figures from the above table.

Firstly, it is the achievement of economic scales. Since Company B and Company C's products offerings are completely different from each other, Company B takes washing machine as its core products, whereas Company C is more focused on air-conditioners and fridges, so though they are in the same industry, but they are not direct competitors, this has created a strategic complementary. Two businesses' dispatch schedule, transportation management, warehousing management, cost settlement, quality secure and the like, which are all under integrated management through Attend, so economic scales are achieved. For example: association between strong businesses which strengthens bargaining and bidding power on warehouse cost

and fairs, so lower logistics costs; In addition, Company B and Company C's joint raw material purchase program also made a positive outcome. Though prices of white goods related raw materials has been continuingly in a growing trend, group buying power has helped in price reduction

Second is the extended geographic coverage. As competition has been so fierce in major cities, now rural areas are becoming the 2<sup>nd</sup> battlefield for the white goods manufacturers. The subsidy policy has also boosted rural areas' white goods demand making rural markets more important. As a response Company B and Company C use COSCO's massive national wide network as a cast platform to send their products to the hardly researched areas. Company B and Company C have taken the advantage of COSCO domestic logistics network of over 300 service providers across the entire country.

Thirdly, Attend as the subsidy company of COSCO, carries on with its advanced IS, barcode technology. Company B and Company C are both the beneficiaries of services such as communication and order tracing and feedback are all efficiently improved. Moreover, the quality of transportation made a breakthrough progress with 99.2% of orders are being safely, accurately and on time arrived at appointed places, which makes less customer complaints and makes faster cash flow.

Furthermore, Company B and Company C's old warehouse management system was dispersive and chaotic, mainly reflected at lower utilization rate of leased warehouse floor spaces, information recovery was low, unscientific storage and lack of standardized management system. After Attend took over, it made a series of reforms according to the two businesses' actual situations, including increasing reliance on COSCO's powerful and fast transportation and delivery capability, removing lower utilized warehouses from the network, and ensuring every single warehouse is connected to Attend's ASP system. Similarly, benefits were achieved

from increased shipping utilisation by consolidation of the two businesses' orders if to the same or similar destination/s, and precisely scheduled shipping routes and size of trucks and etc.

Last but very importantly, “Guanxi” defined by Nassimbeni & Sartor (2006) as “*an interpersonal relationship type characterized by mutual aid and favour-granting*”(p.117) and which has deeply penetrated the Chinese society as an essential social element, “*maintains that in different historical periods, guanxi was able to fill gaps in the legislative and political system by providing a kind of social protection and by fixing behaviour rules*” (p.117). COSCO as a super-huge state-owned enterprise has strong social connection with different local authorities and central government, or the so called gauxi. Local collective enterprises such as Company B and Company C can only be looked after by their own local authority, once out of their territory, their trucks are most likely to meet regional protectionism such as unfair toll way charges, extra imposed tax for various reasons and the like. As an interviewee of Company B said: “*only for toll way, it charges over 200 RMB (equivalent to approximately 31 US dollars) for a standard 15 meter container truck with full load of goods from Wuxi city of Jiangsu province (where Little Swan’s main manufacture site is) to Beijing, while they only charge the exact same-sized truck for half of the price only if COSCO logo is on the trucks*”.

All in all, this white goods logistics alliance platform has been a win-win-win position to COSCO, Company B and Company C. COSCO has successfully got a hand into white goods industry, widened its business scope or rather enhanced its business economic scale. For Company B and Company C which not only reduced fixed and variable logistics costs and improved logistics efficiency and effectiveness, but also more important is that they are now being protected by a super-huge state-owned enterprise, which other 3PL's couldn't offer.

## **4.5. COMPANY D**

### **4.5.1 The Company Background of Company D**

Company D was born in 1968 which restructured into a private enterprise in 2001. It officially got into white goods industry in 1980, with its vast distribution and worldwide partnership network. It now serves customers worldwide with a unique comprehensive line of high standard products. By 2010 with over 30 years of development, Company D employed over 50,000 employees worldwide, and became a major white goods manufacturer and exporter of China, with annual revenue of 107.1 billion of RMB (equivalent to 17 billion USA dollars), and quite big portion of which came from exporting and overseas businesses. While strengthening the white goods industry, through acquisitions, mergers and cooperation, Company D has further diversified itself into new domains such as real estate, automobiles, information technique, finance, and so on.

### **4.5.2 Change from in-house logistics to 3PL.**

Prior 1997, Company D had a transportation department which kept more than 40 staff, and more than 30 drivers, and possessed its own logistics facilities such as trucks, lorries etc, which was in charge of dispatch, transportation and storage of Company D products nationwide. Beside transportation, warehousing was an obvious issue. Dispersed warehouses spread out in the entire country either managed by local dealership or collectively managed by both, had imposed big difficulty on logistics management, and costs of warehousing was out of control. What was worse was the inventory level on the system never matched the actual stock, which directly brought down the service levels.

From 1998, price war among Chinese domestic white goods market had become even more fierce, cost control had almost reached its fullest potential from productions and

material purchasing. As one of major white goods manufacturers, Company D was inevitably involved in the battle, which had further reduced in its profit margins. Logistics was the only way left for Company D to get out from “profit ice age”. In 2000, according to “Price Waterhouse” and “Coopers & Lybrand” two internationally renowned business management consulting firms’ advice, Company D restructured its transport department and made it into an independent subsidiary business as Annto Logistics (Wuhu Annto Logistics Company Limited), and which was not only doing logistics for Company D, but also entitled to take jobs from others, therefore it refers itself as a 3PL service provider; in the same way, Company D also deserved the right to choose the most desired LSP through public bids, and chose the one with the best combination of price and service. Yet Annto Logistics had been always the winner of the public bid, this wasn’t only due to the blood relationship between these two businesses, but also mainly due to Annto Logistics’ dramatic improvement in its performance. After the original transport department became an independent subsidiary company, a separation policy of the right of management and property right took place on the existing vehicles, which meant though vehicles were owned by Annto Logistics, drivers bear their loss or profit, general maintenance and repairing costs and etc, which had extremely simulated drivers enthusiasm and productivity and efficiency. By end of 2000, transportation and warehousing cost of Company D had dropped 10% respectively. In-house logistics era was gone and contract logistics era had arrived in Company D.

#### **4.5.3 Initiate 4PL from 3PL**

In the end of 2002, Company D further restructured Annto Logistics into a 4PL provider, and renamed it Annto SC (Annto Supply Chain Solution Co., Ltd), which has been widely deemed as the first 4PL in the Chinese white goods industry. Gattorna (1998) argues that 4PL is often a joint venture between a primary client and one or more partners. Annto SC absorbed other two major shareholders, who are

Kepple (Kepple Group) from Singapore and one local investment company. Company D and Kepple possess 35% of Atton Logistics' shares respectively, and remaining 30% is held by the investment company. Kepple is a public listed international company which has strong background of telecommunication, network engineering, international logistics and etc. It has provided a strong technical support, and mature international logistics management experiences for Atton SC's IS construction, especially during the transitional stage from 3PL to 4PL, and in return, Kepple entered into China's logistics market through Annto SC.

By 2003, Annto SC had completed its 4PL reformation, by four steps:

- Cashed out certain part of its fixed assets, majority of its commercial vehicles have been sold out or/and leased out. Instead, it took the historical chance of the fact the most Chinese 3PLs nowadays are still smaller in size and narrower in function, through selection Annto SC assembled a group of 3PL and who exclusively under the management of Annto.
- Technically, Annto SC updated a series of IS with Kepple's assistance, such as in-house developed bar-code technology which links up with SPA. This enhanced Annto SC's traceability of goods locations and improved inventory transparency for its service users. It suggests that Annto SC has completely changed from a traditional asset based 3PL to a knowledge and technology based 4PL.
- From 2003, Annto SC has been looking after Company D's white goods sector's entire supply chain network, rather than acting as a distributor as it used to be, and only left R&D and manufacturing to Company D, which has freed up much resources for Company D's diversification ideology, to get into even more profitable areas such as real estate, automobile industries and etc. Since Annto SC manages the entire network by itself, information flow achieved in a timely manner reduced the unnecessary production wastes, which further reduced Company D's production costs.
- Annto SC now offers entire supply chain services for 5 primary customers

across different industries such as FMCG (Fast Moving Consumer Goods), building materials, automobile and so on. Company D white goods section approximately makes up 50% of its business volume, which will be further reduced as 4PL will be adopted by more and more Chinese businesses.

# **CHAPTER FIVE: CROSS-CASE STUDY**

## **5.1. INTRODUCTION**

So far, to some extent the research has provided an understanding of the logistics outsourcing situation occurring within three individual Chinese white goods manufacturers. Through further analysis using cross-case study method, this chapter finds and presents both strengths and weakness of the strategies that are being used by these manufacturers. SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis technique is adopted as an assessment tool. In addition, at the same time, benefits of adopting LSP to these manufacturers are discussed further.

## **5.2. SWOT ANALYSIS TECHNIQUE IS ADOPTED TO COMPARE THREE DIFFERENT LOGISTICS OUTSOURCING MODELS.**

- Company A Logistics (Traditional 3PL, in-house logistics with partly outsourcing)
- Attent Logistics (Allied 3PL outsourcing)
- Annto SC (4PL, entire SC outsourced)

Company A, Attent and Annto are basically three main types of outsourcing models that Chinese white goods manufacturers are currently utilising. Broadly speaking these three types of strategies have fairly corresponded and satisfied these three manufacturer's initial needs and requirements including cost reduction and profit margin enhancements. However, to some extent it has made less influence on final customers' service level, but the business customers (in this case they are referred to dealerships) are benefited specially from the cash flow perspective. This will be further discussed later in this chapter.

### **5.2.1 Strengths of three different models.**

#### Company A Logistics Model

As already mentioned in the last chapter, the CEO of Company A Group has stated that supply chain is Company A's core competence. (Logistics management in China: A case study of Haier Pg.16) And just as Razzaque said that "businesses must be mindful that certain functions should be kept in-house, those advocating the use of outsourcing tend to assert that if a particular logistics function is part of a firm's core competency, then it should be kept in-house" (Outsourcing of logistics functions: a literature survey Pg.99). As a vital part of supply chain operation, Company A keeps its massive I.S. in-house, and established Company A Logistics to closely manage and assess its downstream LSPs, and tightly embedded them into the Company A supply chain system. In doing so, Company A has gained the combined benefits of in-house logistics and contract logistics, such as keeping logistics talents in house. This has a direct influence on its logistics operation, while avoiding paying for fixed assets such as commercial vehicles and storages.

#### Attend Logistics Model

Attend Logistics has given the financial flexibility to both Company B and Company C, in which Company B and Company C turned its logistics fixed costs into variable costs, and saved up loads of resources from logistics areas, for example, Attend Logistics has directly taken over 5156 I.S. from its major shareholder - COSCO, which saved up tons of money for Company B and Company C on their I.S. investment, and savings can be used onto more important area, say, in this case R&D.

#### Annto SC Model

Fourth party logistics is generally classified as a knowledge-intensive industry. Therefore businesses in this industry normally have very strong strengths, and rely on that to gain logistics related jobs. With Kepple's joining, Annto SC has substantially enhanced its strength especially in the IS area. Annto SC possesses or/and links with

a wide arrange of different players in the SC field, for instance, Annto SC directly owns a Annto SC solution consulting company, and directly allied exclusive logistics HR recruitment firms, accounting firms, logistics IS technology businesses and directly manages and coordinates with over 10 large-scaled 3PLs. The series of value added services not only benefit Company D, but also attracted many other 4PL users.

### **5.2.2 Weaknesses of three different models**

#### Company A Logistics

CEO of Company A was intended to foster Company A Logistics to grow up as 3PL service provider to the public, while so far, his intention has got into an awkward situation. As an interviewee said “Company A Logistics is overqualified to its internal logistics, while being as a 3PL service provider which is standing on an awkward place, other white goods manufacturers certainly won’t ask Company A Logistics to take care of their logistics operation because of the competition matter; yet, Company A Logistics doesn’t have competitive advantage in doing logistics outside of white goods industry”. That’s true, as a LSP Company A Logistics has only been providing service to businesses and none of them are in the white goods industry.

In addition, unfortunately due to competition and commercial confidentiality, businesses in the same industry won’t hand over their logistics activities to Company A , or at least, those major parts, which make Company A Logistics can’t find a real strategic partner in the white goods field where it does the best. Therefore, since Company A Logistics was established, besides fulfilling its own internal logistics needs and requirements, has only gained some logistics jobs from FMCG sector.

Lastly, compared with how Attend Logistics and Annto SC were founded, Company A Group has been investing huge capital into Company A Logistics, which is very

resource consuming, while the worse thing is after over 10 years development, it hasn't achieved the initial 3 one-thirds thought. (1/3 of service for Company A Group itself, 1/3 of service for other domestic businesses and 1/3 of service for international businesses)

#### Attend Logistics

So far, the Attend Logistics model has not displayed any form of weakness, COSCO, Company B and Company C all have benefited from this allied relationship, apart from the fact that, both companies have lost their logistics functions internally, and instead, they have put all their eggs in COSCO's one big basket.

#### Annto SC

Annto SC is the first 4PL service provider from China's white goods industry, which has earned a lot of attention not only from academics, but also from industries, and brought enormous financial benefits back to its founders. However, if people say 3PL in China is still at an infant stage then 4PL would be still at the pregnancy stage, plus a great portion of businesses in China still live in the traditional logistics age, therefore due to this deep generational gap, it takes time for businesses to have faith in 4PL. On the other hand, although Annto SC had technical support and backup from Kepple Group, there is still a lack of talent in Annto that it can professionally manage its massive IS.

### **5.2.3 Opportunities of three different models**

#### Company A Logistics

Company A Logistics has been mainly focusing on its internal business, and acting as an internal logistics department, therefore it hasn't really had any trade from businesses that are in the same industry. However, as long as it retains its powerful IS and national network, trades from other industries will surely come to it.

### Attend Logistics

First of all, relying on COSCO, this giant global logistics corporation, Company B and Company C could easily extend their geographic coverage to any corner of the world. Furthermore, Attend Logistics' 5156 network is totally facing to the public, which means the potential income would be higher, although it's already been a cash cow to its shareholders.

### Annto SC

With China officially becoming a member of WTO, more foreign businesses will get into this large market, theoretically and rationally speaking they won't build up their own costly logistics capacity in a foreign country, at least for the first few years, instead they will need a 4PL service provider who will do entire SC service for them. Furthermore, since entire China is facing an issue of logistics talent shortage, fortunately it provides Annto SC a good opportunity to train a bunch of logisticians with comprehensive 4PL skills, which is also an indirect contribution to the entire Chinese logistics industry as well.

#### **5.2.4 Threats of three different models.**

In reality, these logistics organisations are all facing the same threat such as foreign LSPs, after China jointed into WTO, foreign LSPs are rushing into China such as DHL, Maersk, TNT, UPS and etc, depending on their more advanced logistics strategies, higher professional operation, plus their cutting-edge management expertise and technologies which make them more competitive compared to domestics players. While threats can be turned into opportunities, in this case, foreign business' experiences can be borrowed and learned, as long as these Chinese logistics businesses wish to do a good business, they still have so many advantages over those foreign ones, such as cultural differences, language barriers, the way how to manage "Guanxi".

### **5.3. CORRELATION BETWEEN WHITE GOODS INDUSTRY LOGISTICS OUTSOURCING AND CUSTOMER SERVICES**

In this paper, customer contains two meanings: one is final customer and other one is dealership (business customers). As an interviewee from Company A Logistics stated “certainly outsourced distribution function has shortened lead time substantially, which favors the dealerships the most, while also benefits customers and us”. For dealerships reduced lead time which decreases the chance of product out-of-stock, and less safety stock and warehouse floor area requirement. Most importantly, it frees up a big portion of dealers’ capital, which can be used on other crucial areas, such as: reinforce after sales services’ level (normally dealers offer 3 to 5 years of extended product quality warranty), and offer bigger selection for customers by ordering wider range of products. To final customers, the brand loyalty age has gone and service has become the major consideration nowadays. So as long as dealers retain high standard service level, sales volume is most likely to be positive. To manufacturers a positive sales volume is an attractive bait for prospective dealership investors, and more dealerships equals wider geographic coverage, which makes more convenient for customers to shop this brand. In short, an effective and efficient logistics outsourcing strategy can logically push a positive chain reaction to occur.

### **5.4. CONCLUSION**

According to above within and cross-cases analysis, it is quite obvious that Chinese white goods manufacturers’ logistics outsourcing strategies are quite different from each other. However, regardless of what type of strategy has been adopted all have been generating huge benefits for its users. Therefore it is not hard to identify that

logistics strategies can't be judged by its models or characteristics, instead, it really should be judged by whether if the chosen model supports the enterprise's market position, marketing strategy, long term development planning, also its ability of create value and profits to its user and that's the fundamental judgment criteria. In comparison between these three models, the writer personally favors Attend Logistics model, founded by Company B, Company C and COSCO, its more appropriate to call it "logistics strategic alliance". Attend Logistics takes care of Company B and Company C's entire downstream SC, which includes dispatch planning, transportation, warehouse management, quality assurance and so on, all participants share the advantage of big logistics volume, I.S. advantage, lower logistics costs. It has well achieved a cooperation relationship between manufacturers and logistics providers, which avoided fighting alone risk, and as Wisner, Leong & Tan (2005) indicated "*companies are just beginning to learn what nations have always known: in a complex, uncertain world filled with dangerous opponents, it is best not to go it alone*" (p.62). The establishment of Attend Logistics made a breakthrough of trust issue, but the mutual complementarities of capability, technology and IS has set up a good example for the entire white goods industry.

# **CHAPTER SIX: CONCLUSION**

## **6.1. INTRODUCTION**

The major motivation of this research was to explore what assistance 3PL companies provide China's white goods manufacturers in the area of improved logistics performance and how this does or does not provide advantage.

This thesis has provided a comprehensive description of the framework of Chinese white goods manufacturers' logistics outsourcing strategies, which should provide insight for people who are interested in learning about this particular sector.

Through the previous literature review and comparison of four major Chinese white goods manufacturers, it is evident that nowadays contract logistics has been emerging and is rising as a strong competitive weapon, in addition to the more traditional ways such as production cost reduction, marketing and so on. The use of efficient and effective logistics within white goods manufacturers enables the entire business to improve.

## **6.2. CONCLUSION OF FINDINGS FROM THE THREE MODELS OF CONTRACTED LOGISTICS**

Although China's contract logistics industry is still in relative infancy, the fast growing white goods industry has partly stimulated and has been heavily involved in its growth. Each of the businesses investigated by the writer of this paper has made significant success economically and this in part can be attributed to their strategy with outsourcing logistics. Despite the fact there were three models built and structured differently, the writer has found five common areas among them, and has looked to identify those key factors that successful white goods 3PL business should have in China. These are:

1. Must own basic logistics assets in order to serve key contract well.
2. Good and reliable relationship with local governmental authorities is a key to success.
3. Advanced information system and accurate data integrity between 3PL and its customers plays an increasingly important roll in success.
4. Comprehensive domestic networks enable white goods manufacturers to reach every corner of their domestic market, even into far rural areas.
5. Strong supply chain knowledge, such as effective route planning, cargo consolidation optimization is necessary in order to provide a competitive price to thousands of local competitors.

### **6.3. LIMITATIONS OF THIS STUDY**

A number of caveats need to be noted regarding the present study. First, the research has been limited by the overall time and financial budget, which have prevented the researcher from studying more cases of Chinese white goods manufacturers, which would have benefited the research to form a wider understanding about the logistics outsourcing practices in this industry. In addition, although telephone interview and website information did provide useful data for describing the chosen white goods manufacturers' logistics outsourcing strategies, this is still not as perfect as conducting an onsite observation and talking to informants face to face because sometimes body language could lead the researcher to a deeper and more direct level of understanding. Thirdly, informants chosen were purely upper level logistics managers, and only one from each manufacturer was selected, so this might have influenced the research accuracy by simply taking account of the informant's personal interests, which might be more subjective rather than objective. Moreover, due to confidentiality concerns, the majority of the data and figures that the writer gained from informants was somewhat old, for example figures showing the logistics differences before and after Company C and Company B started using LSP were actually almost 10 years old.

#### **6.4. DIRECTION FOR FUTURE RESEARCH**

Clearly, one study cannot discover all aspects of a phenomenon, especially within countries of a scale such as China, with its unique economic and political system, plus its vast huge territory with unbalanced regional development. Therefore in future studies, if possible more cases should be introduced to the data pool which is most likely to increase research accuracy.

Although Chinese contract logistics industry is still in its take-off stage, from the three cases that have been studied, it is clear that utilisation of LSP is becoming the major solution to Chinese white goods manufacturers' success. Therefore, LSP has a foreseeably bright future in China, at least in this particular industry. On the other hand, with China officially joining the WTO the threshold for foreign white goods brands to get into China has been lowered, since away from their home countries, rationally speaking they have to use LSPs in China. Interestingly this started from 2006 and according the WTO agreement, foreign LSPs were also entitled to operate in China. Foreign white goods brands prefer existing Chinese local LSPs or new comers from worldwide with so-called better service level, and what the differences in selecting criteria between Chinese manufacturers and foreign manufacturers of selecting LSPs, which certainly will be an interesting area to investigate.

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## APPENDIX ONE: FOUR ECONOMIC UTILITIES

<b>Time utility</b>	– is increasing products’ marketability by making them available to customers when they need them.
<b>Place utilities</b>	– is increasing products’ marketability by delivering them to wherever customers want them.
<b>Form utility</b>	– is about transforming and changing the physical characteristics of raw materials or parts into finished products, increasing their marketability.
<b>Possession utility</b>	– is the process of making value by changing who owns a product or who receives a service.

## **APPENDIX TWO: INTERVIEW QUESTIONS ON WHITE GOODS MANUFACTURERS' LOGISTICS OUTSOURCING PERFORMANCE.**

**This information is for reference only and will not be published.**

Company name:

Informant name:

Job title:

Email address:

Ph No.

Part one: company background

1. Type of company

state owned business

private business

collective business

2. Annual turnover

2008\_\_\_\_\_

2009\_\_\_\_\_

2010\_\_\_\_\_

3. Number of employees

less than 1000

more than 1000

less than 10000

more than 10000

4. Establishment of your business

before 1990

before 2001

after 2001

5. Market coverage within China

regional

national

6. Business strategy

commodity

cost leadership

service leadership

combination of cost and service

7. To what extent does the competition exist in this industry national wide?

little

medium

intense

Part two: Analysis of logistics outsourcing position

8. Does your company use LSP (logistics service provider)

yes

no

9. If yes, what the major criteria/s of LSP selection

price

business reputation

service quality

geographic coverage

innovative in IT and pioneer in equipment development

others (please specify)

10. Which area/s use LSP

- transportation
- warehousing
- information system
- packaging
- loading and unloading
- distribution processing
- dispatching
- others (please specify)

11. To what extent of logistics function has your business outsourced to LSPs

- small
- medium
- large

12. What were the initiatives behind logistics outsourcing?

- cost deduction
- faster response to the market
- better service
- organizational reengineering
- following the trend
- others (please specify)

13. Has your business benefited from logistics outsourcing

- no
- yes, but a little
- yes, a lot

If yes, please continue with this survey.

14. Has your business strategy been reinforced by logistic outsourcing, and to what extend

- no
- little
- a lot

15. Compares with prior outsourcing, has LSP been helping your business to reduce inventory levels, while remain the same service level.

- increased
- increased substantially
- remained the same
- reduced
- reduced substantially

16. What the customer satisfaction level like now, in comparison with that of prior outsourcing

- decreased substantially
- decreased
- remained the same
- increased
- increased substantially

17. Has logistic outsourcing been facilitating your business shift around resources on core businesses?

- never
- yes
- yes, and a lot

18. Has your business gained more market share through LSP's extended geographic coverage?

- no
- yes, a little
- yes, substantially

19. Has the average lead time reduced or increased since adopted logistic outsourcing

- reduced, please quantify it approximately \_\_\_\_\_
- remained the same
- increased, please quantify it approximately\_\_\_\_\_

20. How much assets has been freed up due to outsourcing financially

- no
- little
- big

Open-ended questions:

What do you see as the major outcome differences between logistics outsourcing and logistics kept in-house?

Is your LSP a strong arm in terms of fighting against competitors; supporting keeping and expanding existing market share; retaining customer loyalty? If yes, then why and how?

To your business, are LSP's strategic, tactical or operational partners? Is the relationship at 'arms-length', and why?

How often does your company evaluate and monitor your LSPs' performance, and is there any guideline such as KPI (key performance indicators)?

Is your business using any types of advanced IT system to ensure accurate communication between you and your LSP's?

According to this researcher's observation from existing literature, cost reduction is one of major drivers for business to adopt logistic outsourcing. If this were the case and there is cost savings, would your company share this benefit with your customers somehow?

Shortened lead time has been addressed by many academics and researchers as another major benefit of logistics outsourcing has your business and your customers benefited from this and to what extent?

Is there any sorts of penalty for LSP's for under performance such as late for agreed delivery deadline (except under special conditions), or incentives for outstanding performers?

As a customer to the LSP, does your business also have a say in their business decisions, such as updating existing equipments, IT system etc.?