TRANSITIONING FROM AN IN-HOUSE LOGISTICS PROVIDER TO A THIRD PARTY LOGISTICS SERVICE PROVIDER: A CASE STUDY OF AN IN-HOUSE LOGISTICS COMPANY IN A THAI BREWERY

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A Thesis Submitted to the Graduate School of Naresuan University
in Partial Fulfillment of the Requirements
for the Master of Science Degree in Logistics and Supply Chain
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Thesis entitled "Transitioning from an in-house logistics provider to a third party logistics service provider: a case study of an in-house logistics company in a Thai brewery"

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has been approved by the Graduate School as partial fulfillment of the requirements for the Master of Science Degree in Logistics and Supply Chain of Naresuan University

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ABSTRACT

In the past decades, third party logistics (3PL) developed along different lines and to a different extent in different areas of the world. Competition between 3PL service providers is increasingly difficult. Some parent companies transitioned their in-house logistics unit to a fully commercial 3PL service provider in order to earn more market share in some Asian countries such as Korea and Japan (AHN, ISHII and AHN, 2013). Due to the position as a key transport hub in the GMS area, it is clear that the export and manufacturing potential are strong and growing in Thailand. There are numerous previous studies focusing on selection criteria from the clients' perspectives and key success factors from 3PL service providers' perspectives. But there are few papers aiming to research the factors that affect the transitioning behaviours in terms of the company with an in-house logistics unit. Therefore, 6 cases consisting of the representatives of clients companies, 3PL service providers that were established as 3PL service providers, and 3PL service providers that were founded as an in-house logistics unit, but transitioned to become an established 3PL service provider. These companies are investigated using in-depth interviews. This study focuses on investigating the key success factors (KSFs) from transitioning from an in-house logistics unit to a fully commercial 3PL service providers are discussed in the study which will be a guideline to some business groups for establishing their logistics subsidiaries to service the Parent's business and outside customers, then the conceptual framework will be built.

To this purpose, a case study of Thai brewery is selected for identifying the capabilities gap among the transitioning in-house logistics units, the successfully transitioned logistics subsidiaries and 3PL service providers. Finally, recommendations for the case company are given.

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CHAPTER I

INTRODUCTION

Statement of Research

Nowadays, globalization is an overwhelming world trend. It's hard for a company to be competitive without working in cooperation with other company. The increasing number of sources of supply, manufacturers and distributers on a global scale for companies across the world, making their supply chains complicated and difficult to manage whith costs that can compose up to 55% of the total product cost (Lapinskaitė, 2014).

According to Armstrong and Associates, in the year of 2014 logistics costs around the world are about 78,220 million US dollars. According to their project, the logistics cost is pegged between 8% and 20% of GDP in each country. For Thailand, the figure is about 10.7%, given the GDP of over $ 376.9 million and the logistics cost of about $ 40.7 million (Armstrong and Associates, Inc, 2014).

Total logistics costs compose a percentage of companies' turnover which consists of six main activities namely, transportation, warehousing, carrying, administration, packaging and indirect costs of logistics. Aiming to reach the goal of high quality, flexibility in changing markets, maximum customer service level and minimum costs, logistics in business plays an significant role (Henry.C, 2012).

The costs of logistics makes up an important percentage of company turn over and product total costs (Engblom, 2012). Logistic costs compose approximately 29% of a product's total cost (Fredrinksson, 2009).

Aiming at reducing total logistics and supply chain costs, logistics optimization of the flow of production along the supply chain is not only accomplished by one company but also required by all the players in chain. In North America and Europe and even in some Asian developing countries, an increasing trend of outsourcing logistics activities to external coordinator occurs in a large number of companies.

To some extent, oursourcing strategies is proven to be an appropriate way to improve performance, optimize supply chain and reduce costs. Compared with companies that do not outsource their logistics activities, companies can achieve better

service performance, focus on their core business and build their strategic alliances network by outsourcing logistics activities (Hsiao, 2010). By outsoucing logistics functions to outside partners, a higher extent of supply chain management construct gained by the companies that include 3PLs than the companies that exclude 3PLs in their supply chain management (Jayarama, 2010). 6% additional productivity achived by the companies from outsourcing their IT activities to the external partners (Chang, 2012). Another significant benefit of outsoucing is cost reduction. Companies have outsourced their logistics actitvities increasingly to make their supply chain operate more efficiently. Outsourcing is utilized as a strategy to reduce total costs in overall supply chain functions by many companies, in order to meet cuostomers' requirements and reduce negative impacts to services (Relph, 2014).

A company, which possesses logistics know-how on the coordination of economic resources, may have opportunities to act as a logistics coordinator. Such a logistics coordinator, also called Third Party Logistics (3PL), has been gaining attention and emerging as a new type of industry which is a result of the deregulation of freight transport industry during 1980's, and has developed parallel along with the development of IT in the 1990's.

3PL involves "a relationship between a shipper and a 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" (Marasco, 2008).

3PL are widely used in various industries. Mining and other primary industries and manufacturers see supply chain and logistics more as cost of doing business (Latif, 2014). Transportation and warehousing are the two activities that are often outsourced in the automotive supply chain (Mary J, 2010).

Many existing studies also show that 3PL services are quite regularly used in both developed and developing countries, such as Finland (Solakivi, 2013) and Turkey (Aktas, 2011). In mainland China and countries in Southern Asia such as Malaysia (Sohail, 2003) and Singapore (Piplani, Pokharel and Tan, 2004), 3PL industy is growing very fast thanks to a shift of manufacturing base from developed countries to developing countries, in these regions and increasing volumes of imports from these regions to developed countries (Mitra, 2008).

Armstrong and Associates also shows that the 3PL market across the world is increasing at a rapid rate. Furthermore, the world 3PL revenues in 2014 was 751.8 billion dollars respectively while was $ 2.9 billion in Thailand. The statues of 3PL industry in China, Malaysia, Singapore, Vietnam, Thailand are shown in Table 1.

Table 1 Logistics Costs and Third-Party Logistics Revenues (US$ Billions)

Country	GDP	Logistics (GDP %)	Logistics Cost	3PL Revenue %	3PL Revenue
China	10,360.0	18.00%	1,864.8	8.00%	149.1
Malaysia	336.9	10.70%	36.1	7.10%	2.6
Singapore	307.1	8.50%	26.1	11.50%	3.0
Thailand	380.5	10.70%	40.7	7.20%	2.9
Vietnam	187.8	10.70%	20.1	7.40%	1.5

Source: Armstrong and Associates, 2014

3PL is gaining acceptance and developing as an emerging industry in Thailand. The most frequently employed 3PL services are transportation, packaging and warehousing operations. In contrast, inventory management and information systems are the least popular services for Thai companies (Setthakaset, 2005). The industries with the most widely used 3PL services in Thailand is the food and beverage industry while the least is the raw material industry (Sombatpatra, 2006). There are a lot of competitors in the 3PL market in Thailand. Overseas multinational companies focus on using services from overseas countries, 3PLs which make local 3PLs lose opportunities to do business (Dokkulab, 2005).

Numerous studies have discussed in terms of the situation that the 3PLs can function well along the supply chain. The outsourcing framework is built to help companies decide whether activities should be self-run or outsourced to an external company (McIvor, 2010). In order to reduce transaction and production costs, outsourcing to a 3PL has proven to be a useful approach based on the transaction costs (Bolumole, 2007). Supply chain feartures impact on the mode of administration along the supply chain. If the external 3PL keep transfer costs low and the cost of compliance efforts low, the 3PLs function at full potential (Lu, 2014).

One particular type of 3PL service provider are 3PLs that transitioned from former in-house logistics units which belonged to large business groups including logisitics subsidiaires and affiliated logisitics companies.

In-house logisitcs units refer to the internal logisitics section or division invested by its Parent's company including vehicles, warehouses and other infrastructure, aims at servicing only its business groups (Perotti and Gelfer, 2001).

In this study, the 3PL service providers are defined as 3PLs that were estabilished to service outside customers and clients, and exclude the 3PLs that belong to business groups such as logisitics subsidiaires and affiliated logisitics companies.

Supported by parent companies, the subsidiary logistics companies can gain better performance than other independent firms do. Numerous affiliated logistics companies bring higher profits, more outstanding performance and greater values to their parent' companies than non-affiliated companies do (Chang and Choi, 1988; Perotti and Gelfer, 2001).

Due to the superior performance and stable relationship between business groups, the subsidiary or affiliated logistics companies are preferred by their parent companies in daily operation. At the moment of enter the logistics market, some big business groups establish their own subsidiary or affiliated logistics companies instead of employing external service providers (Chang and Choi, 1988). In some developed countries, business groups set up their own subsidiaries for the purpose of competing with poorly performing 3PL service providers (Pankaj and Khanna, 1998) Subsidiaries can display higher profits than independent companies by providing efficient forms of administration (Chang and Hong, 2000). Operating through subsidiary companies, the parent company can earn higher profits (Khanna and Palepu, 2000).

In such an increasingly competitive 3PL market, some business groups begin to pursue additional profits by offering the excessive capability of their own affiliated logistics companies to outside customers based on the fulfillment of logistics activities in the business groups. After being established as an affiliated company of the business group, the former in-house logisitics unit faces the question of: 1) what are the key success factors to transition from an in-house logisitics unit to a fully commercial 3PL service provider, and 2) how to transition successfully to become a fully commercial 3PL service provider to service potential customers outside.

As one of the developing countries in which 3PL industry is emerging, Thailand is also one of the Southeast Asian five "tigers", and one of the 10 members of the Asian Economic Community which will emprasize Thailand's geographic location as a main logistics hub for the Greater Mekong Sub-region (GMS), which makes Thailand become the one country that is able to play an essencial role in those developing countries.

As a former in-house logisitics unit belonging to one of the biggest brewery groups in Thailand, the company under consideration in this study, transitioned to become an affiliated company. In this study the object is to answer the question of how a 3PL provider is able to transition from an in-house logistics service provider to an independent fully commercial 3PL provider. In such an increasingly competitive 3PL market, some business groups are pursuing additional profits by offering the extra capability of their own affiliated logistics companies to outside customers based on the fulfillment of logistics activities in the business groups. After being established as an affiliated company of the business group, the former in-house logisitics unit faces the question of: 1) what are the key success factors to transition from an in-house logisitics unit to a fully commercial 3PL service provider, and 2) how to transition successfully to become a fully commercial 3PL service provider to service potential customers outside.

Objective

There are not many exsting studies discussing the key success factors of transition from an in-house logisitcs unit to a fully commercial 3PL service provider. There are few studies that have been carried out from the perspective both from the 3PL service clients, 3PL service providers and 3PL that transitioned from in-house logisitics units. Therefore, a multiple case study methodology through in-depth interview will be applied in this paper with following objectives:

1. To analyse the current status of 3PL services industry in Thailand.
2. To study the key success factors of transition from an in-house logisitcs unit to a fully commercial 3PL service provider in Thailand. In terms of this objective, a conceptual framework of research is built.

3. 3PL and current characteristics of the Case Company in the transitionning process.

4. To fill in the capabilities gap, recommendations for Case Company will be developed in the latter part of the dissertaion. The Case Company faces a great deal of challenges in transitionning.

Scope of research

This research is an exploration study of key success factors of transition from in-house logisitics unit to a fully commercial 3PL service provider, due to the time constrain and the limited sample population, the author studies on only 4 parts:

1. Research the 3PL industry in Thailand

Research the current status of 3PL services market, including Logisitcs Performance Index, cost of logistics, structure of logisitcs cost, logisitcs cost in revenue and structure of 3PL industry based on the collected secondary data such as articles, reports, and papers from government websites, newspapers, and magazines, to be able to perceive 3PL industry in Thailand.

2. Study the key success factors of transition from an in-house logistics unit to a fully commercial 3PL service provider in Thailand in the brewery industry.

In-depth interview of 7 case studies both from 3PL clients and 3PL service providers' perpective are taken. The 7 cases are distributed in large-scale companies including the beverage industry, electronic and health & beauty industries, multinational 3PL service providers in Thailand and abroad.

A conceptual framework of research based on the input of 3PL clients' aspect, 3PL service providers' aspect and 3PL that has transitioned from an in-house logisitcs to a fully commercial 3PL service provider aspect is developed.

3. Identify the capabilities gap using qualitative methods between the case study companies and the Case Company based on key success factors through the result of interviews.

4. Develop recommendations to fill in the capabilities gap for the Case Company by description.

To achive those objectives above, the structure of this study is outlined in 7 chapters below. the The first chapter of this study gives the introduction which discusses

the importance of the cost of logistics to customers and the trend towards outsourcing and the benefis of outsourcing. Logistics departments that have become semi-independent subsidaries may out perform some established logistics companies. This leads to the two research questions, and the four objectives and scope of the study (see above).

To the purpose that finding the key success factors of fully commercial 3PL providers that transit from an in-house logisitcs unit, the second chapter includes the literature review in terms of 3PL rationale, 3PL service provider selection criteria from perspective of clients and key success factors from the providers' perspective in the 3PL industry.

The third chapter discuss the case study methodology including concept of case study, the research trend, process of in-depth interview. At first, the conceptual framework of research is disscussed. And then the success factors analysis that given by the respondents in order to identify the capabilities gaps between the case company and superior 3PLs.

Then, the profile of the case company will be described in the forth chapter. A summary of the interviews is presented in this chapter.

The fifth chapter contains a disscussion of this study. In this section, cases based on selected factors are compared, some examples which can represent the factors are proposed. Second, we figure out the gap between the in-house unit and the transitioned 3PL service provider. Third, we analyse the reason for gap existing and figure out the approaches to fill the gap.

Charpter 6 aims to discuss the results of this research in order to fulfill the objectives mentioned in the first charpter. Chapter 7 gives the conclusion and limitations of this reseach.

CHAPTER II

LITERATURE REVIEW

Third Party Logistics (3PL)

In this study, the term logistics can be defined as :"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." according to the Council of Logistics Management, a trade organization based in the United States:1991.

3PL refers to a firm that provides service to its customers or clients of outsourced logisitics service for part or all of their supply chian management functions, which are not a consignor or a consignee. Those firms are so-called 3PL service providers (3PLs). Generally, it is more common for a company to outsource multiple logistics activities than a single activity independently based on company's strategies. Although the term 3PL suggests that the triadic relationship between seller, buyer and 3PL service provider, in general, these relationships are mostly limited to relationships

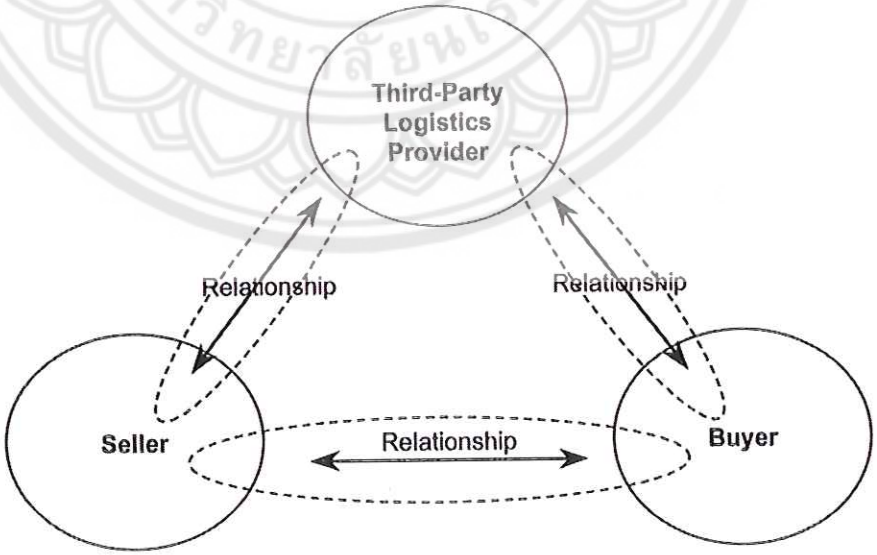


Figure 1 Triadic relationships among seller, buyer and 3PL service provider

Source: Bask, 2001

between seller and 3PL provider or between buyer and 3PL provider, seeing Figure 1 (Bask, 2001).

3PL do not own the goods or participate in the sale of goods and doesn't belong to the first party or the second party, but provide its specialized logistics services through cooperate with the first party or second party. The first party is the shipper or supplier which is the origin of the goods that need to be transported. The second party is the buyer namely the destination of the transported goods (Hertz.S, 2003).

However, 3PLs provide customers with contract-based, alliance-based, serialized, personalized, information-based logistics agency services. The type of 3PL services are diverse and dynamic based on the effect of the evolved business. The common 3PL services including transportation, design logistics systems, EDI capabilities, report management, freight forwarder, carrier selection,freight forwarding people, customs agents, information management, warehousing, consulting, freight payment, freight negotiations. Under the influence of the business evolved itself, other performed activities are classified into forwarding, packaging, distribution and logistics postponement which have been developed over time, both in knowledge and in information technology (Hertz.S, 2003).

According to the previous studies, a 3PL service provider can be regarded as an integrated and contract-based logistics service provider for client companies. Aiming at controlling IT-related activities, goods flow administration such as order processing in inventory management also included in the function of the 3PL provider. However, instead of offering all the services solely, 3PL service providers can service their customers more efficiently by outsourcing some activities to sub-contractors which lead to the existance of asset-right-based and the non-asset-based 3PL service providers. 3PL service providers are expanding their breadth of services attribute to the awareness of potential in the outsourced logistics market by incorporating value-added and customized services for clients companies' supply chain solutions. Besides the physical service, logistics consulting services are offered by some 3PL service providers (Vishal.V.Bhoyar, 2013).

The advantages outsourcing activities to the 3PLs are showed as below:

Firstly, 3PL enables enterprises to concentrate on their own familiar business engaged in the distribution of resources on the core business. For this reason, companies

could focus resources on their main industry, leaving logistics and other auxiliary functions to a specialist logistics company.

Secondly, 3PLs can make use of new technology flexibly, for the purpose of information-exchange inventory and reducing costs. With the development of science and technology, the professional 3PLs can continue to update technology and equipment, but it is difficult for individual manufacturing companies to update their own resources or skills in a short time; different retailers may have different and changeable distribution and IT requirements. 3PLs can be a fast, cost-competitive way to meet their requirements. Similarly, 3PLs have the ability to meet the requirements of potential customers of a business, so that companies can contact the retailer.

Third, reduce fixed asset investment, accelerate capital turnover. Self-built logistics companies need to invest a lot of money to buy logistics equipment, construct warehouses and a logistics information network and other professional equipment. These resources, lack of funds for enterprises, especially small and medium enterprises is a heavy burden. If you use 3PLs not only do you reduce investment facilities, but also the liberation of funds used for warehouse and fleet areas and accelerated cash flows.

Fourth, 3PLs can provide flexible and value-added customer services. If you are a supplier of raw materials and your customers need to quickly replenish their supply, you would need to have regional warehouse facilities. By 3PLs warehousing services, you can meet customer needs. If you are a final product supplier, the use of 3PLs can also provide the end customer as they provide more diverse services, to bring more added value to your customers.

The 3PL industry in Thailand

In this part, the statues of 3PL industry in thailand are shown by the aspect of logistics performance index, cost of logitics, structure of logistics cost, structure of 3PL industry and logistics cost to sales in industries based on amount of secondary data, such as, articles, reports, and papers from government website, newspaper, and magazine, to be able to perceive factors that affect 3PL market in Thailand.

1. Logistics Performance Index (LPI)

Accoding to the World Bank, Logistics Performance Index(LPI) is an interactive benchmarking tool created to help countries identify the challenges and

opportunities they face in their performance on trade logistics and what they can do to improve their performance. The LPI is based on a worldwide survey of operators on the ground (global freight forwarders and express carriers) with quantitative data on the performance of key components of the logistics chain in the country of work. The index ranges using a 5-point scale, with a higher score representing better performance (World Bank Group, 2016).

In this research, the LPI Rank which consists of customs, infrastructure, logistics competence and timeliness of 5 Asian countries including Singapore, Malaysia, China, Thailand and Vietnam. The performance of Thailand is compared with other 4 countries. Thailand ranking 4th in terms of overall LPI Rank while the aspect Customs is the 3rd and Timeliness is the 2nd of the 5 countries, seeing Figure 2.

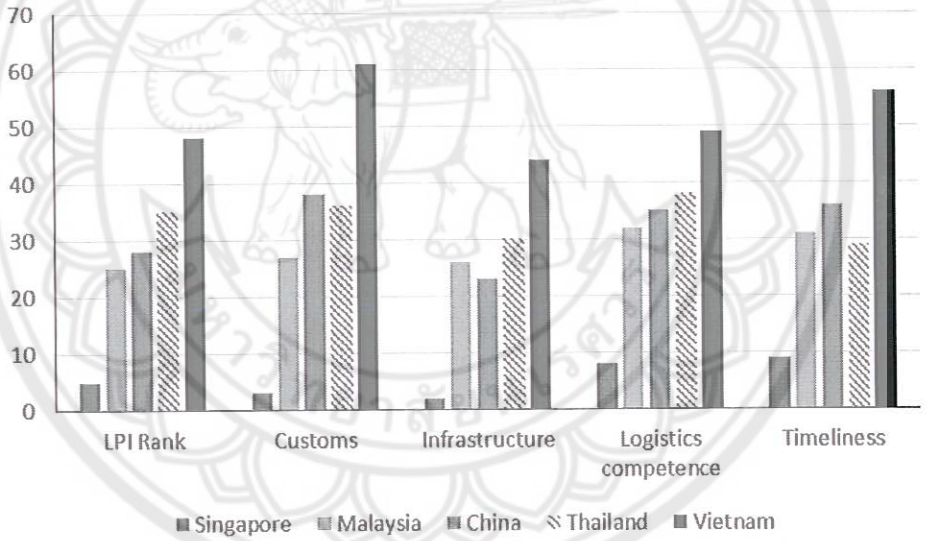


Figure 2 Logistics Performance Index ranking by countries

Source: World Bank Group, 2016

2. Cost of logistics in Thailand

Trend growth in value of logistics in 2013 as a movement that is consistent with economic Thailand in 2013, slowing down from the year 2012 followed by a decline of momentum in domestic demand due to the accelerated spending. Then in previous years to rehabilitate damaged by flooding in 2011, with economic and political

uncertainty increased (Office of the National Economic and Social Development Board, 2014).

In 2013 the cost of logistics in Thailand totaled 1835.2 billion baht, representing a ratio of 14.2 percent of gross domestic product at current prices for the year (GDP at Current Prices) which is estimated at 12,910.0 billion baht. the proportion dropped from 14.4 % in 2012 and is valued at the cost of each item is as follows: cost of transportation of Thailand worth 953.2 billion baht, an increase of 1.78 from the year 2012, representing 7.4 % of GDP storage costs, inventory totaled 715.2 billion baht, an increase of 4.73 per annum. 5.5 per cent of GDP and the cost of managing the logistics segment totaled 166.8 billion baht, up by 3.47 % per year, representing a 1.3 per cent GDP, seeing Figure 3.

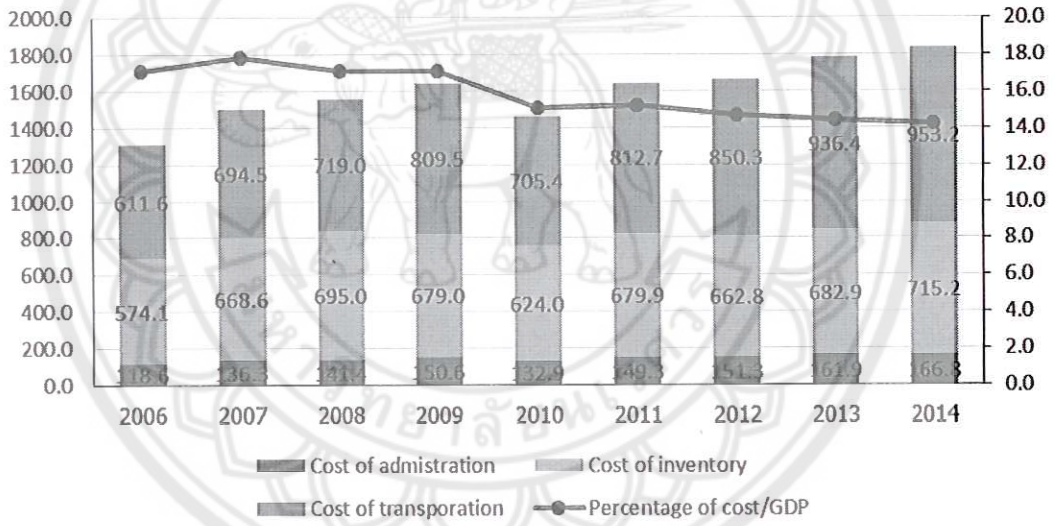


Figure 3 Logistis cost of Thailand

Source: Office of the National Economic and Social Development Board, 2014.

3. Structure of logistics cost

Structure of logistics cost in thailand are categorized in 3 parts including logistics freight cost, cost of storage inventory and cost of administration. Logistics freight costs in 2013 is the largest, accounting for 51.9 percent of the total cost of logistics. Down from 52.6 % in 2012, followed by the cost of storage inventory ratio of

39.0, up from 38.4 % in 2012 cost of administration accounting for only 9.1 %, which shows in Figure 4.

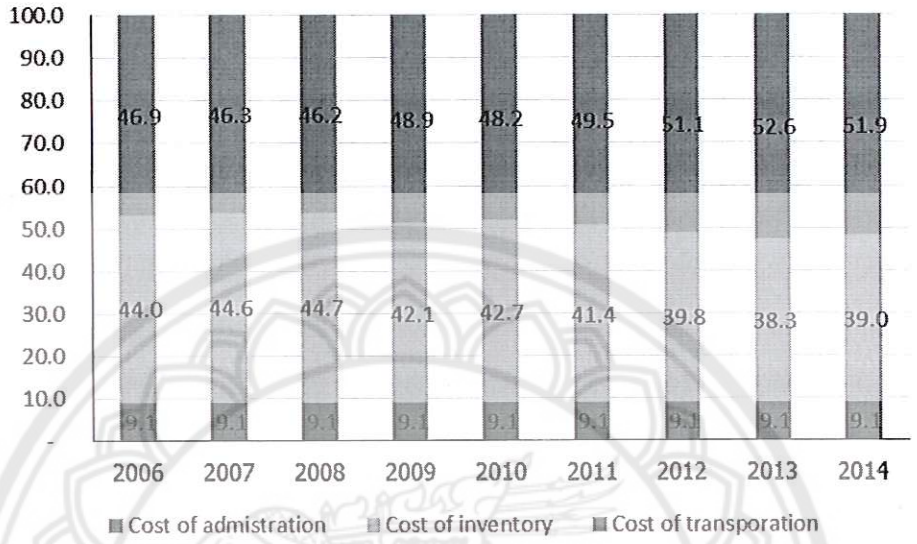


Figure 4 Structure of logistics cost in Thailand

Source: Office of the National Economic and Social Development Board, 2014

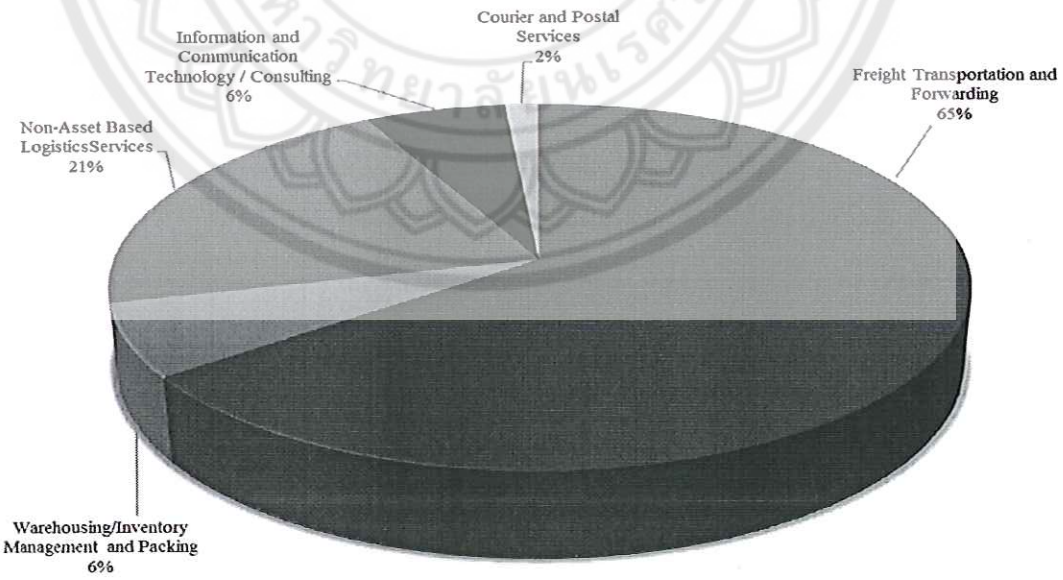


Figure 5 Structure of 3PL industry in Thailand

Source: Bureau of Business Development, 2011

4. Structure of 3PL industry of Thailand

Figure 5 shows the structure of 3PL industry of Thailand which the 3PL service proviers are categoried into 5 groups including 1) freight transportation and forwarding with the population of 11,272 firms which owns 65% of the total 3PLs, 2) warehousing/inventory management and packing in the quantity of 1,121 that representing the 6% of total amount, 3) 3672 firms that operate non-asset based logistics services which refer the 21% of total 3PLs, 4) the groups of information and communication technology / consulting in a number of 1060 firms owns to 6% in total and 5) only 1% of 3PLs offers courier and postal services in amount of 253 firms. It is concluded that Group1 which has the most population owns the most market share in 75.98% while the Group 4 owns 10.92% of the market in the 4th most polulation of total, seeing Table 2.

Table 2 3PL categories and structure in Thailand in year 2011

Group	Quantity	Capital (million baht)	Total asset (million baht)	Total revenue (million baht)	Market share (%)
1.Freight Transportation and Forwarding	11,272	151,213	590,412	490,288	75.98
2.Warehousing/Inventory Management and Packing	1,121	35,710	51,820	21,150	3.28
3.Non-Asset Based Logistics Services	3,672	14,492	29,900	44,400	6.88
4.Information and Communication Technology / Consulting	1,060	73,800	309,300	70,460	10.92
5.Courier and Postal Services	253	1,546	20,200	18,970	2.94
Total	17,378	276,761	1,001,633	645,268	100

Source: Bureau of Business Development and calculated by researchers, 2011

Table 3 Percentage of logistics cost in revenue (categorized by top 10 industries in 2013)

List	Industry	Percentage by years				
		2009	2010	2011	2012	2013
1	Tanning and dressing of leather	9.43	8.85	9.30	9.30	14.71
2	Furniture manufacturing	10.80	13.17	13.51	8.96	11.53
3	Metal ores manufacturing	8.53	15.18	17.47	14.04	11.37
4	Textile manufacturing	7.98	12.63	9.57	7.98	11.28
5	Wood and cork manufacturing	11.83	11.04	13.19	9.26	10.98
6	Basic metals manufacturing	8.36	4.68	8.81	8.81	9.02
7	Fabricated metal rod manufacturing	12.43	9.83	8.84	8.73	8.99
8	Costume manufacturing	9.58	10.60	8.56	7.42	8.49
9	Food products and beverages	10.86	9.02	6.77	7.00	8.31
10	Medical manufacturing	12.77	11.74	7.38	6.2	8.01

Source: Office of the National Economic and Social Development Board, 2014

5. Cost logistics to sales in industries

In 2013 the cost of logistics to sales was 8.06 %, increased from the year 2012 which cost logistics to sales was 7.27 % by the industry with costs. The cost of logistics to sales top 5 industries, include (1) tanning and dressing of leather with 14.71%, (2) furniture manufacturing industry is 11.53, (3) Basic metals manufacture compose 11.37%, (4) textiles manufacturing 11.28 %, (5) the Wood and cork manufacturing make up 10.98 %. In terms of food products and beverages industry which ranks 9th in the year 2013 changing in the range from 6.77% to 10.86%, seeing Table 3.

3PL Selection criteria

In the early studies, selection of 3PL providers that from the clients perspective are investigated in a large amount. To meet the requirement, the characteristics of the outstanding logistics provider which the clients expected can be concluded by the selection issue. In this paper, the criteria for 3PL selection problems which developed

from the clients and customer's perspective are going to be analysed in the provider's perspective.

Through reviewing of 19 3PL selection-related papers, from which publications and articles published in SD (Science direct) and Google scholar in the year within 2004-2015, 8 selection criteria for 3PL service providers are most frequently considered by the 3PL clients namely cost, relationship, services, quality, information system, flexibility, delivery, professionalism. (Colson, 2004; Moberg, 2004; Briggs, 2010; Göl and Çatay; 2007, Govindan, 2012; Tsai, 2007; Işıklar, 2007; Efendigil, 2008; Liu, 2009; Kannan, 2009; Liou, 2010; Sasikumar, 2011; Li, 2012; Falsini, 2012; Ho, 2012). The distribution of review papers by authors and their criteria for 3PL service providers' selection are shown in Table 4.

In this study, the 8 selection criteria of 3PLs are defined as following:

Cost is related to the total cost of logistics outsourcing include price, cost reduction and saving, low cost distribution, and expected leasing cost, administration cost, inventory cost. In their comparative study between typical regional third party warehousing firm and national firms in US, 12 criteria are discussed in the study and cost and service were frequently mentioned as critical selection criteria (Moberg, 2004).

Relationship includes shared risks and rewards, reliability, truth, dependence, alliance, compatibility in order to ensure cooperation between the client and the 3PL. Due to the close logistics outsourcing relationships between the 3PL service providers, dependence and reduce transaction costs are easily to manage (Chu Z, 2012).

Services refers to the attributes such as breadth of services, specialization of services, variety of available services, pre-sale/post-sale customer services, and value-added services. The result of the study indicated that in the following determinant of industrial demand choice is service performance of the 3PL, service cost and added value (Tsai, 2007).

Quality of the 3PL includes many aspects such as, commitment to continuous improvement, SQAS/ISO standards environment issues, and risk management.

Information technology and system that has a 3PL to facilitate communication and execution of logistics operations of its customers. It's related to attributes such as EDI, tracking/tracing, technology capabilities, information accessibility, availability of computer network, and information security. Moreover, the investment in new

technology was proved to be the essential requirement for the 3PLs to develop new customer (Moberg, 2004).

Flexibility refers to ability to adapt to changing customers' requirements and circumstances. Its attributes include ability to meet future requirement, capacity to accommodate and grow the client's business, system flexibility index, responsiveness to target market or service requests, capability to handle specific business requirements, and time response capability. Results of some study showed logistics information system, customer service, on-time delivery, responsiveness were the most important criteria (Liu and Wang, 2009).

Delivery: It's represented by attributes such as: on-time delivery and shipment, delivery speed, accuracy of document. The on-time service performance is the most essential determinant of customer satisfaction (Tsai, 2007).

Professionalism: 3PL exhibit sound knowledge of services in the industry and display punctuality and courtesy in the way they interact and present to the customers. It is characterized by attributes such as expertise, competence, and experience.

Key Success Factors of 3PL

There has been a series study of key success factors (KSFs) of 3PL industry. The 15 papers are then reviewed from publications and articles published in SD (Science Direct), Google scholar in the year within 1991-2012 and 8 criteria are summarized due to the specification to the phrase such as key success factors, critical factors, critical criteria, 3PL measurement, 3PL selection, performance measurement are being searched, 3PL selection. The selected researches are written both from perspective of 3PL service providers and clients . As a result of review, 8 KSFs are selected by the author author based on the review of 15 relevant papers, namely: breadth of services, relationship with customers, Logistics capability, skilled logistics professionals, flexibility, internationalization, integration of supply chain, and investment in information system and equipment. Table 5 shows the distribution by authors and their key success factors.

1. Breadth of services

Breadth of services including characterization and specialization of services, variety of available services, pre-sale and post-sale customer services. The success

factor relation with 3PLs are considered to be an insignificant factor among Indian 3PL service providers except freight forwarding service offered by the 3PL firms, breath of services is not taking so serious about Indian 3PL firms (Mothilal, 2011). There are researches from other authors indicate the breadth of services is one of the most frequently argued factors that make sense to the 3PL success (Mitra, 2008; Mothilal, 2012; Lieb, 2003).

2. Relationship with customer

The relationship with customers is defined as shared risks, rewards and long-term contract strategy that ensure cooperation between the customer and the 3PLs. It also helps in controlling the 3PL opportunistic behavior. Reliability, truth, dependence, alliance, compatibility, reciprocity are among its attributes. The key success factor of relationship with customers significantly influenced the operations measures of on-time delivery performance and customer satisfaction and the financial measure of profit growth (Mothilal, 2012; Lieb, 2007). 3PL importance, logistics performance (delivery, value-added services, flexibility, and quality), information sharing, and legal contract factors positively influenced that relationship (Chu Z, 2012).

3. Logistics capability

Logistics capability is a company in a highly competitive environment to create customer value and unique service excellence in the field. In cluding experience, delivery on-time and in-full. Logistics capability is that part of a firm's resources – including all assets, competencies, organizational processes, firm attributes, information, knowledge, etc. –which allow it to conceive of and implement strategies that improve efficiency and effectiveness (Barney, 1991). In the previous studies result revealed logistics capability to be positively related to firm performance in the e-commerce market (Cho, J, 2008). Logistics marketing capability is the key determinant for superior financial performance (Nath, 2010). Logistics service capability had a positive effect on the performance of container shipping service firms (Yang, 2009).

4. Skilled logistics professionals

It is defined as the knowledge of services in the industry that present to the customers, such as industry practice leaders and experts and feature industry focused thought leadership and events. It is characterized by attributes such as expertise, competence, and profession. As one of the most well-known study, Lieb Series shows

that the skilled professionals of 3PLs make a great importance of success (Lieb, 2003; Lieb, 2005). Procurement professionals of 3PL service providers are playing a more significant role in the 3PL selection process than they were previously (Wu, 2007).

5. Flexibility

It includes the attribute of fleet, respond well to unexpected change in demand, responsive capability to the customers those ability to adapt to changing customers' requirements and circumstances. Include respond well to unexpected changes in demand, supplier is the extension of production line, and long terms contract strategy, quality priority in supplier evaluation and so on (Wee, 2010; Rajesh, 2011).

6. Internationalization

It refers to attributes such as the oversea operation, capability of import and export, distribution coverage, geographical specialization and coverage, international scope, market coverage, shipment destinations, and distance. Internationalization, industry focus or specialization, investment in information systems and integration of supply chains stand out as the most important factors for success as a 3PL provider (Mothilal, 2012; Mitra, 2008).

7. Integration of supply chain

It is vital as it optimizes the linkages amongst value activities (linkages within a firm's value chain), in particular, optimizing vertical linkages (linkage between the firm's value chain and the value chains of its suppliers and customers). 3PL companies need to establish a close business partnership with suppliers, customers and even competitors. It seems to be essential success factor in numerous researches (Mothilal S. , 2012).

8. Investment in information system and equipment

The 3PLs offer IT sourcing service are frequatly prefered by the large clients and long-term realaitnship is built between client company and 3PLs (Chang, 2012). Investment in facilitating communication and execution of logistics operations of its customers. It's related to attributes such as investment in operating with EDI, RFID, tracking/tracing, technology capabilities, information accessibility, availability of computer network, and information security (Chu, 2012; Lieb, 2003; Mothilal, 2011; Mothilal, 2012; Mitra, 2008).

Table 4 Distribution of criteria for 3PL selection

Author(year)	Criteria							
	Cost	Relationship	Services	Quality	Information system	Flexibility	Delivery	Professionalism
Colson (2004)	√	√	√	√	√			
Moberg (2004)	√	√	√	√	√	√		√
Briggs (2010)		√	√		√		√	
Chu Z (2012)		√	√	√	√	√	√	
Göl H (2007)	√	√	√	√	√	√		√
Govindan (2012)	√	√	√	√		√	√	
Lai KH (2004)		√	√		√	√		
Tsai MC(2007)	√	√	√	√			√	√
Anderson (2011)	√	√	√	√		√	√	√
Isıklar G (2007)	√	√	√	√	√		√	
Almeida (2007)	√	√					√	
Efendigil (2008)	√				√	√	√	
Liu HT (2009)	√	√	√	√	√	√	√	√
Kannan (2009)	√	√		√	√	√	√	
Liou (2010)	√	√		√	√	√		√
Sasikumar (2011)	√	√		√	√	√		√
Li (2012)		√	√	√	√			
Falsini (2012)	√		√	√	√	√	√	
Ho W (2012)	√		√	√	√	√		
Total	15	16	14	15	15	13	11	7

Table 5 Distribution of key success factors

Author (year)	Breadth of services	Relationship with customer	Logistics capability	Skilled logistics professionals	Flexibility	Internationali-zation	Integration of supply chain	Investment in IS/IT and equipment
Mothilal, S (2011)	√	√		√			√	√
Mothilal, S (2012)	√	√	√	√		√	√	√
Mitra (2008)	√		√	√		√	√	√
Lieb, R (2007)				√				
Lieb, R (2003)	√			√			√	√
Lieb, R (2005)		√						
Leib, R (2008)				√				
Chu Z (2012)		√						√
Barney (1991)			√					
Cho, J (2008)			√					
Nath (2010)	√		√		√	√		
Yang (2009)			√					
Wu (2007).				√				
Wee (2010),			√		√			√
Rajesh (2011)					√			
Total	5	4	7	7	3	3	4	6

CHAPTER III

RESEARCH METHODOLOGY

For existing studies that aim to identify the 3PLs' key success factors, research design such as a survey based on a numerous sampling population is chosen for collecting data. To identify key success factors in supplier management, an importance-performance analysis can be employed (Wee, 2010). Other KSFs investigate methodologies such as AHP, ANP is frequently used as well (Kayakutlu, 2011; Zhang, 2012; Chena, 2011). An amount of standard statistical techniques, such as regression analysis, structural equation modelling, simultaneous equations, factor analysis, or ANOVA can be applied for investigating the KSF variables (Kim, 2012; Mitra, 2008; Liua, 2011).

However, the above research design is not appropriate when the study sample is not large. Since there few existing studies that discuss key success factors of 3PL that are transitioning from in-house logistics units in Thailand, an exploratory case study method based on limited case studies is utilized in this study.

After comparing the shortcomings of other case studies, the twofold definition of the case study by Yin (2014) is referenced by authors.

1. A case study is an empirical inquiry that

1.1 Investigates a contemporary phenomenon (the "case") in depth and within its real-world context, especially when

1.2 The boundaries between phenomenon and context may not be clearly evident.

2. A case study inquiry

2.1 Copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result

2.2 Relies on multiple sources of evidence, with data needing to converge in a triangulation fashion and as another result

2.3 Benefits from the prior development of theoretical propositions to guide data collection and analysis (Yin, 2014).

Comparing with other research methods that involving key success factors of 3PLs, case study method is appropriate to answer the research questions started with "how" and "why" (Yin, 2014). "How" and "why" questions are more explanatory and likely to lead to the use of a case study, history, or experiment as the preferred research method.

Another major strength of the case method is theory building and identifying new variables and relationships not envisaged in the original research.

Thereby, a qualitative approach is more appropriate to our study, which is useful for under theorized topics as the case study, new concepts and factors can be added to the research and the method is flexible enough to obtain new results and findings. Because of these possible advantages, the case study method is considered to be limited representative with no classification and possibility of errors.

The case study design follows a replication logic. Case studies consist of a single or a multiple case study, if you studied two or more organizations in the same manner, you would have an embedded, multiple-case study (Yin, 2012). The empirical evidence for the work comes from a 3PL service provider study that involved the multiple-case study method (Stefansson, 2006; Cui, 2009; Fredriksson, 2007; Sraboti, 2012).

Case study methodology

In a study by Barratt (Barratt, Choi and Li, 2011) 461 case-based articles that used either qualitative or quantitative research methods or a mixture of both methods among the total 5526 articles published from 1992 to 2007. The number of studies using case methodology increased year-on-year during this period.

Case study has recently become a widely utilized research method. Ngram Viewer's findings suggest that during the period from 1980 to 2008, the frequency of "case study research" has shown a distinct upward trend in contrast to other forms of research such as "survey research," "experimental designs," and "random assignment", even though the absolute level is still lower than those of other methods (Yin R. , 2014).

studies are found in economics, business and international business, which allows investigators to focus on a "case" and retain a holistic and real-world perspective -- such as studying organizational and managerial processes (Yin, 2014).

There are few research studies relating to logistics service providers reported that use case methodology. Our goal here is to provide a greater depth of understanding of the key success factors when a logistics service provider transitions from an in-house logistics unit to a 3PL logistics service provider.

Conceptual framework of research

Unlike other research methods, a comprehensive and standard catalogue of research designs for case study research has yet to emerge (Yin, 2014).

This study considers the key success factors of transition from an in-house logistics unit to a fully commercial 3PL. It is one of the few studies to look at this aspect of the 3PL system. From an empirical perspective, the case study method is based on in-depth interviews are employed in this study. Therefore, an exploratory investigation conceptual framework was built, see in Figure 6.

According to this study, the conceptual characteristics of the transitioned logistics unit are impacted by the following aspects:

1. "Criteria for 3PL service provider selection" from the 3PL client perspective through reviews of previous studies;

2. According to other studies, "Key success factors of 3PL service providers from 3PL service providers' perspective are collected;

3. Characteristics of 3PL service providers that have transitioned from in-house logistics departments into a subsidiary of a service providers.

After the conceptual characteristics of transitioned logistics unit are defined, the capabilities gap between a logistics unit that is under initial transition and the conceptual characteristics of an already transitioned logistics unit will be identified.

The choice of semi-structured interviews was deliberate since open-ended questions allow interviewees to develop their views and ideas and also lead to the identification of unforeseen research dimensions. The chosen design enabled the researcher to collect in-depth information on identification of 3PLs' key success factors.

Unlike quantitative research, in-depth interviews which are also known as the

semi-structured method (semi-structured interview) is one of the main methods of data collection usually adopted in qualitative research. Before conducting interviews, in-depth interviews require researchers to design the outline of interviews and basic frameworks according to the problem and the purpose of the research. In the course of the interview, the interviewer can be flexible and change the order of the questions according to the needs of the interview. At the same time, the respondents can also adjust interview process and direction (Sun, 2012).

In the literature review chapter, numerous previous studies were reviewed by the author. Eight key success factors were defined of the competitive third party logistics service providers. Three semi-structured interviews were designed according to the respondents responses and containing the key success factors that were identified. The relevant 8 selection criteria of the 3PL service providers for the clients are identified as well. Familiarity, with the 8 selection criteria were built in to another semi-structured interview for the 3PL service users. The details of the interview in a total of 7 cases as shown below.

In order to figure out the key success factors to become a competitive 3PL service provider, then identify the capability gaps between in-house logistics units and 3PL service providers, and make recommendations to fill the capability gaps, a research structure is built, see Figure 7.

Sampling

In social science research, researchers can only choose one part of the samples for personnel studying instead of interviewing all respondent one by one since the population of the respondent is big. Sampling in social science research can be divided into two categories: probability sampling and non-probability sampling (Sun, 2012). Since the detailed and in-depth materials are required in research, interviews focus on quality rather than the amount of interviews. Therefore the flexible non-probability sampling is chosen, which can sample the respondents for providing the maximum amount of information.

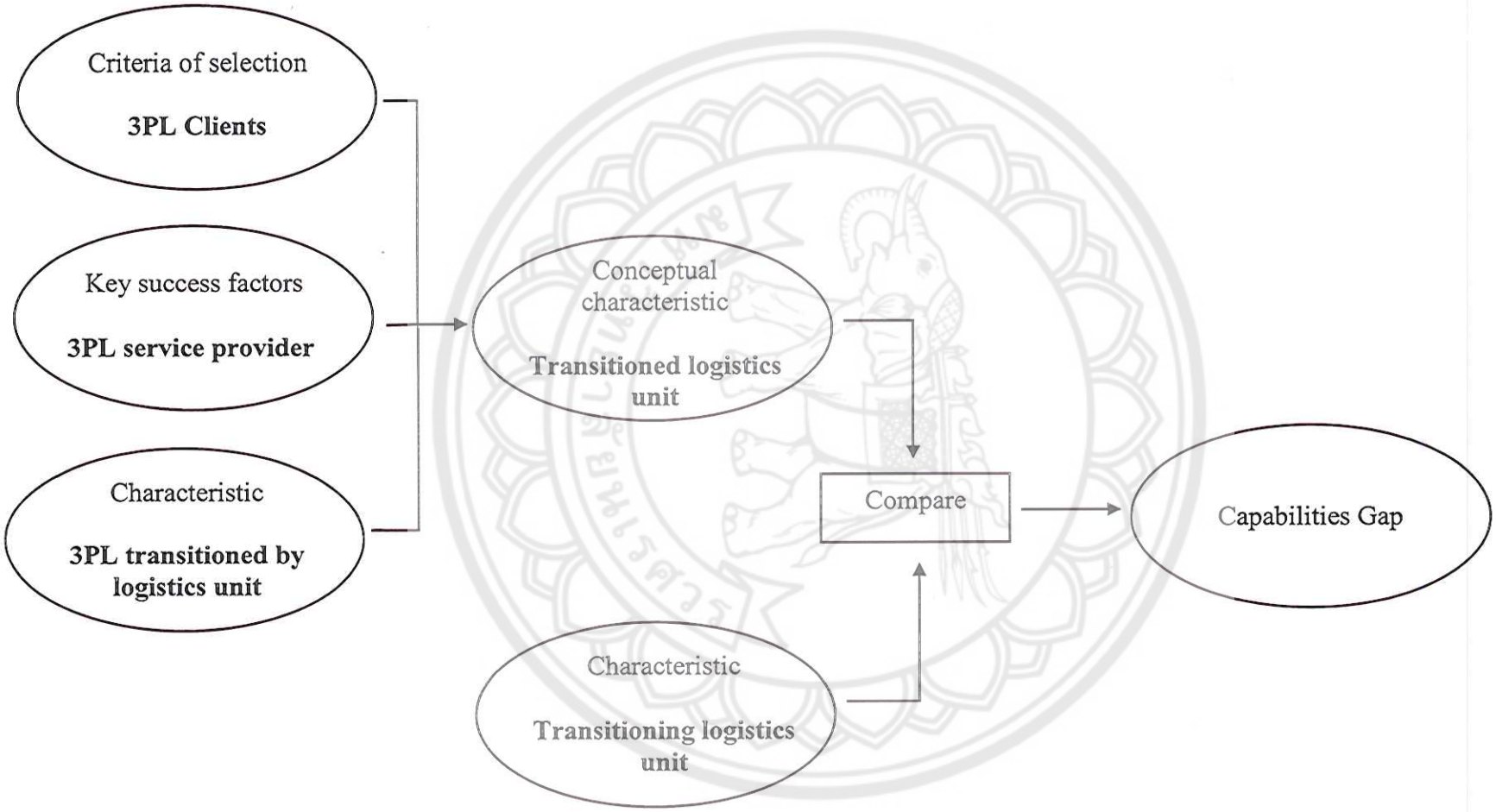


Figure 6 Conceptual framework of research

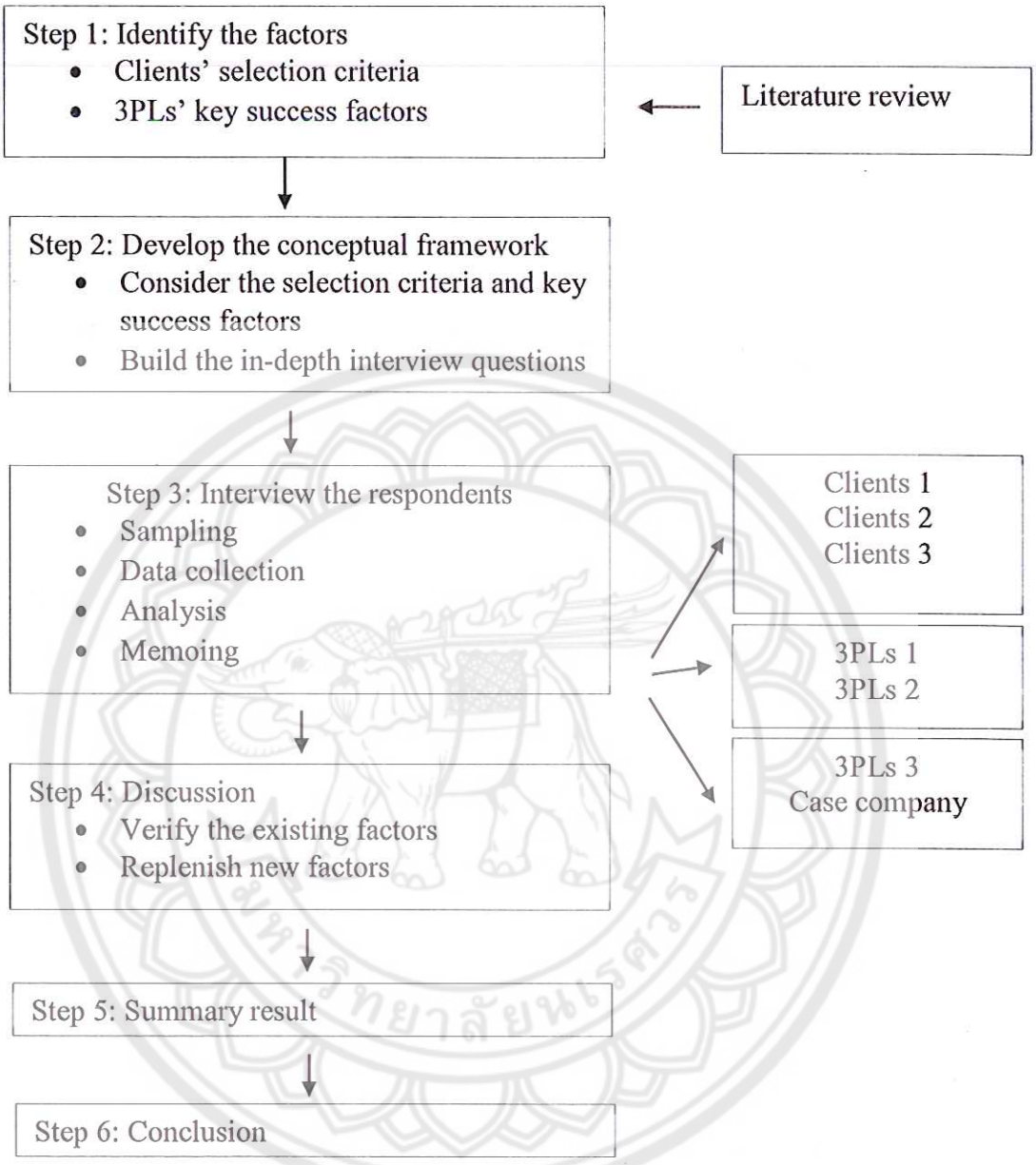


Figure 7 Research structure

By concluding the previous studies, methods of sampling including purposive sampling, diversity sampling and snow-ball sampling method (Jin Zeng, 2013). For in-depth interview study, the researchers don't focus on the number of samples is big or small, but focus on whether the sample can answer the research questions more completely and relatively accurate. Due to the small relatively sample, the purposive sampling is utilized for ensuring that interviews are taken with those who can provide the main information of research question.

However, no matter what method is adopted, researches must know when they've interviewed enough respondents. How to determine the number of respondents is enough? Based on the point of Seidman, there are two criteria for "Enough" namely 1) sufficiency and 2) saturation of information. It is concluded that the signal for enough respondents: 1. the sufficient number to reflect the range of cases in the similar structural and social condition; 2. the interviewer begins to hear the same information reported, no new and important topic appears any more. It is not limited to the number of in-depth interviews respondents but reaches the goal of information saturation (Seidman, 2006).

The emphasis of the research work was placed on investigating the key success factors of transition from an in-house logistics unit to a fully commercial 3PLs, which is the contract between clients' selection criteria, success factors of fully commercial 3PLs then compare with success factors of 3PLs that transition from in-house logistics unit. For this reason, we strove to find typical medium to large size organizations in different industries in order to present the contrast between the chosen cases.

For multiple case studies, each case must be carefully selected to achieve replication of results (Yin R. , 2014). Those cases including 3 clients (namely C1, C2 and C3) with the requirement of logistics outsourced from different industry, two 3PLs (namely 3PL1 and 3PL2) and one 3PLs that transitioned from the logistics unit of their Parent company (3PL3) and the case study company who is transitioning in this research namely Case Company.

The background of the three 3PL client cases are different. Client Company 1 (C1) is one of the largest local beverage company in Thailand who owns self-run warehouse and in the developed relationship with its 3PL service provider. Client Company 2 (C2) is a main hard disk manufacturing company in the world which sets up the manufactured base in Thailand. Client Company 3 (C3) whose parent company is the global leader in pharmacy-led, health and wellbeing retail with over 13,100 stores in 11 countries. However, the production base is in UK, the core business of the Thailand branch is marketing.

In addition, in order to strengthen the demonstration of the research, another 3 case are sampled as the representatives of 3PL services provider.

In the part of service providers, 3PL service provider 1 (3PL1) is a local 3PL service provider in Thailand. The research focus on the key success factors as a

competitive local service provider. Besides, 3PL service provider 2 (3PL2) was the first air express operator to provide overnight delivery from Thailand to Europe and Asia and has become number one in express and logistics in Thailand by offering customers a comprehensive range of logistics solutions. As one of the top global 3PL service provider, the key success factors as a competitive global service provider namely 3PL2 is worth to study. 3PL service provider 3 (3PL3) is one of the companies that transition from in-house logistics unit to a fully commercial 3PL service provider during the period from 1997 until now, it can be the empirical case to investigate the process of move from an in-house logistics unit to a fully commercial logistics service provider. Case Company was established in 2010 separating from Thailand's top beverage and food Business Group while discovering to service the customers outside the group. Table 6 shows the background of the company and profile of the respondents seeing as below:

Data collection

In-depth interviews is an art of questioning and listening, quality of interview is associated with interview techniques. In general, the interviewer can start from some basic question in order to establish an approximated atmosphere and dialogue rhythm. Then lead to the opening questions slowly and question further when the key point appears, let the respondents have the opportunity to give their opinion of some important issues, express deeply and freely. At the end of the interview, summary specific issue and end the interview naturally.

The questioning method can categorized into three types including specific questions, open-ended questions and probing questions (Creswell, 2014).

First type is specific questions. Specific question refers to a specific number, amount and some detailed information. If the respondents reject to answer some questions, the author can offer him or her some range of choose in order to grasp the real situation. The Example 1 is some questions that the researchers use in the beginning of the interview, in order to get more detailed information about each case which from specific background.

Example 1, Specific questions.

Question: What are the characteristics of cosmetics production logistics?

Answer: Due to the changeable business climate, 3PL service providers of cosmetics industry must handle high volumes of product, inventory restrictions and make sure on-time delivery at a competitive cost.

The second type is open-ended questions. Specific questions is closed questions which may lead the respondent lose their interest and not good to do some in-depth discussion. Therefore, open-ended questions is one of the most useful type for asking question. Open-ended questions whose characteristic are adequate information and reliably context received refers to the question without concrete answer and allow the respondent think and give their opinion freely and flexibly. However, too many open-ended questions may lead respondents to miss the centre of dialogue and feel not know what to do. Therefore, it is noticed during the interview, the interviewers have to combine specific questions with the open – ended questions in order to make an active and comfort talking atmosphere which make the interview more efficient.

Example 2, Open-ended questions.

Question: What are your opinion of 3PL industry in Thailand?

Answer: When our company begin to outsource logistics to 3PLs, there are lots of 3PLs in the same pattern of services, such as diverse type of service, good quality and performance in a not high cost. Compare with local 3PL service providers, the more global and stable 3PL service providers are preferred according to our company policy. Local companies are hard for survival and may be taken over by the large companies in the future.

The third type of question is probing questions. Probing questions recommend the interviewer ask more detailed, in-depth and complete questions based on the answer to the previous question. It can also be asked specific questions for more detailed information, and open-ended questions for clarifying the facts and discuss the central issue. Probing questions is the main difference between in-depth interview and quantitative approach, is the soul of in-depth interview, the quality of total interview depends on the quality of probing question.

Example 3, Probing questions

Question: According to the company policy, what are the key factors of relationship management between your company and the 3PL service providers?

Table 6 Background of the company and profile of the respondents

Company	Nationality	Industry	Type	No. of respondents	Position
C1	Thai	Manufacture	Beverage	1	Logistics director
C2	US based	Manufacture	Electronic	3	Logistics director/manager
C3	UK based	Retailed	Health & beauty business	1	Logistics director
3PL1	Thai	3PL	Agricultural , chemical, garment, electrical appliances, food, consumer products, dangerous goods	1	Logistics director
3PL2	German based	3PL	Retailed manufactured, automotive and the technology	1	Supply chain solution manager
3PL3	Thai	3PL	Cement-Building materials, papers, chemical, energy, agriculture, food and beverage, automatic	1	Business planning manager
Case Company	Thai	3PL	Beverage and food industry	4	Business development manager/Logistics manager and analysis

Answer: The key factors that keep and improve the relationship between company and 3PL service provider is that sometimes company has to adjust based on the real situation in order to make the operation more efficient. Actually, the company choose the 3PL outsourced pattern since the company is established, so it is clear that the relationship between the 3PL service providers and company is essential.

Question: You say the relationship between your company and 3PL service providers is essential, are there any reflection if the company change the 3PL service provider?

Answer: There will not be any big reflection if company change the 3PLs. Because the function we outsourced to them such as load and up-load, short-distance transportation are not our core logistics function due to the superior self-run warehouse system that we invest. Otherwise, our company focus on the risk management so that there are more than 10 3PLs co-operate with us, so it may not be the problem if we change our 3PL.

Analysis

In order to prove the consistency between the issue in real case with the existed factors in the literature review part, the interview questions are based on the literature review part which with the factors built-in. Besides, another purpose that the authors purchase is to figure out the new factors beyond the previous researches.

After the in-depth interview, a large amount of text material is collected, and it's recommended that the researchers should finish the recording. Initial material management analysis can help to adjust the interview outline and research direction, delete non-related issue. At the same time, new issue or point can be added in the following interview so that the amended outline can reflect the social issue and reality more (Sun, 2012).

In this study, 4 steps for the materials management are utilized. At first, the materials of each case are categorized by the factors that summary from literature review. Then the important issue and key sentence are screened out to represent the standpoint of the respondents. Thirdly, the key words that summary from the text are filled in the tables in order to compare the some factors in different case. At last, regular pattern and characteristics are shown in Table 7 by the replication logic.

Table 7 Example of summary table from cases

	C1	C2	C3	3PL1	3PL2	3PL3	3PL4
Service	--	--	--	--	--	--	--
Relationship	--	--	--	--	--	--	--
Logistics capability	--	--	--	--	--	--	--
⋮	--	--	--	--	--	--	--

Memoing

As analysing is the key procedure to deal with interview materials, memoing is the significant step to in-depth interview writing. During the process of interview and data compilation, researchers should write memos to keep records for their own opinion on research, especially related people, events, thoughts and concepts and themes of confusion which will constitute the blueprint for writing, so that lay a solid foundation for the formal writing of an in-depth interview study.

The role of the memo is to combine different concepts, themes, events and stories together to explore the logical link between them, so that construct the emotional and rational understanding of the respondents' social life and social environment on the basis of extensive interviews (Charmaz, 2006).

Since the memo whose characteristics is extempore and immediately writing is prepared and understood by authors themselves which reflects the tracks of researchers' thought and the theory construction process for later writing. However, the thesis writing is based on reader's systematic and theoretical understanding of the research, interview materials will be categorized and transited through the process of theory building, concept identification and analysis in order to present to the readers (Sun., 2011). The following is the authors' memo concerning that the relationship management between company and 3PLs service providers. The author's thinking and understanding of question is a process from question to find the related answers, while the process from writing memo to the final paragraphs of the article is accumulation process.

Memoing: How many 3PLs that the company cooperated? How to manage the relationship with 3PLs? What are the important issue for keeping and improving the relationship between company and 3PLs?

Text: There are more than 10 service providers helping the company to distribute the product. The reasons that adopt several 3PL service providers is because of risk management. The key factors that keep and improve the relationship between company and service provider is the company has to adjust based on the real situation in order to make the operation more efficient. Because the company choose the 3PL pattern since the company is established, so it is clear that the relationship between the 3PLs and company is essential. Settle up several testing project with the 3PL service providers to improve both side together. The 3PLs that are categorized in two parts each managed through the short-term and long-term contracts. The Short-term contract decision based on the changeable price of oil. Long-term contract is signed based on the win-win relationship, such as investment in the specific vehicles for the company by 3PL service provider, expand the fleet of vehicle for some testing project.

CHAPTER IV

CASE STUDY

Client Company 1

Client 1 is one of the largest ready-to-drink (RTD) green tea and herbal tea beverage company which successfully creating demand for green tea drinks in Thailand. 90% of the production process and warehouse management are automatically controlled. Most of goods are consumed domestic which sell through modern trade and traditional trade channel, just 2% of the product are export. The automatic warehouse is invest and constructed by C1 itself which equipped with the AS/RS system. Few functions such as transportation, load and upload are outsourced to the 3PLs. With the high volume of consumed namely 400,000 pallet per year, high frequently transportation and load and upload process are need.

Client Company 2

Client 2 is a manufactured company which is a long-time innovator and storage industry leader which own the market share more than 40%. As a storage technology pacesetter, the company produces reliable, high-performance hard disk drives and solid state drives. These drives are deployed by OEMs and integrators in desktop and mobile computers, enterprise computing systems, embedded systems and consumer electronics applications, as well as by the company in providing its own storage products. C1's largest manufacturing base is located in middle part of Thailand, where it employs more than 1,500 engineers and scientists and over 23,000 employees in aggregate.

Client Company 3

Client 3 is part of its Business Group which in the area of pharmacy-led, health and wellbeing retail. The company is engaged in the retail health & beauty business, and was registered in 1990s as the only 100% accredited pharmacy chain in Thailand. Nowadays, the company has over 230 stores spread across 37 provinces throughout Thailand. Since the core business of it is marketing, C3 Company outsources all the logistics activities to its 3PL service provider.

3PL Service Provider 1

3PL1 is a Thai local 3PL service provider whose Parent Company was founded in 1975. With the experience through transportation between factories and warehouses, product distribution to many wholesalers and retailers, moving service for factories, offices, houses and many government agencies in Thailand. Along with the business development, the company extend the type and scope of service especially employing information technology in servicing customers.

3PL Service Provider 2

Established in 1973, 3PL2 is a division of the global brand which is the leader of the International express and logistics industry. In addition to providing air and ocean freight services, 3PL2 prides itself in cross border trucking transportation, multi-modal logistics, in-house customs brokerage as well as state-of-the-art general and free zone warehousing management & dedicated value-added services, combined with worldwide coverage and an in-depth understanding of local markets. 3PL2's core business can be divided into four specialist divisions in order to cover all of the extensive service needs of the customers with the right level of focus and expertise as bellowing: The first divisions is DHL Express which is one of the leading global providers of international road, air and rail-based courier and express services for business and private customers. The next division is E-commerce which focus on the domestic market. The third division is global freight forwarding; this division comprises international air and ocean freight as well as European overland transportation services. The last division is supply chain or corporate information solutions which focus on tailor made customer solutions.

3PL Service Provider 3

3PL3 is one subsidiary a Thailand's largest conglomerates of business operation which has diversified into 4 core businesses, namely chemicals, paper, cement - building materials. 3PL3 is one of the representative company that transitioned from an in-house logistics unit to a full commercial 3PLs in Thailand. Early in the 1990s, 3PL3 was only a supporting function responsible for transportation. Due to the economic crisis in 1997, 3PL3 was established in 1999 as a subsidiary after the Business

Group restructuring. Then the 3PL3 has grown and developed continually increasingly which nowadays become one of the top 3PLs mainly in the domestic market in Thailand.

The Case Company

As a subsidiary company, the Case Company was established in 2010 under the Business Group which is the leader in the beverage and food industry, and then gradually to other businesses including packaging, logistics, property development and energy in Thailand. In the year 2007, the Case company was just the logistics unit which responsible for the transportation and warehouse management activities for the Business Group. The Case Company was established in 2010 as a subsidiary company which is transitioning to provide logistics services for the Business Group, as well as general customers. After transitioned, the Case Company is suffer from lack of experience and less reputation to perform as general 3PL service provider due to the employees' previous concept in working and lack of motivation. Most of the service that the Case Company offers are based on the Parent's scope of business such as domestic transportation, warehouse, custom clearance, import and export service.

Products of Parent company consist of alcohol and non-alcohol product. With 10% self-run vehicle, the product are transferred to the agents and wholesalers but not directly to the end customers. Alcohol product in the selling channel which customer can receive goods at factory and warehouse by themselves or order company to send directly to customers' warehouse. While non-alcohol product with only will sent directly to customers from Parent's warehouse which establish in every province. Besides, the company service the external customers through backhaul transportation which close to the destination by the Parent company's transportation route.

Summary

After interview, two groups of key success factors are summarized by the authors which are categorised in the two tables below. Table 8 shows the 9 key success factors remaining of the general 3PLs which the Case Company supposed to be when compare each factor between the clients' and general 3PLs' perspectives. To the purpose whether the existing factors are appropriated in this cases in Thailand and investigate the new factors. 6 key success factors in terms of 3PL that already transitioned to a 3PL

and the Case Company who is under transitioning period in terms of this factors, seeing Table 9. In order to fill the capability gaps, the key success factors of service providers based on the perspective of clients, general 3PL service provider, 3PL transitioned from logistics unit and Case Company which is still an in-house logistics function who want to become a competitive 3PL service providers are shown in next part.

Table 8 Summary from interview (General 3PL related)

Key success factors	C1	C2	C3	3PL1	3PL2	3PL3	Case
Service	Less important	Moderate important	Very important	Adequate	Adequate	Adequate	Moderate adequate
Relationship	Innovate	Innovate/ tailored-made	Reliant	Substantial	Substantial	Motivated	Motivated
Logistics capability	Important	Important	Important	Quite strong	Strong	Strong	Weak
Skilled logistics professionals	Not considered	Middle ratio	Middle ratio	High ratio	Middle ratio		
Flexibility	Important	Very important	Very important	Fast	Very Fast	Very Fast	Fast
International	Not important	Global	important	Multi-national	Global	Multi-national	Domestic
Integration of supply chain	Not important	Very important	Very important	High level	High level	High level	Middle level
IT and IS	Not important	Very important	Moderate important	Adequate	Adequate	Adequate	Moderate adequate
Cost/Price	Low ratio	High ratio	Middle ratio	Optimal	Optimal	Bergin power	Optimal

Table 9 Summary from interview (Transitioned 3PL related)

Key succeed factor	3PL3	Case
Motivation	Continually	Lacking
New team establishment	Pointed	Weak
Customers segment development	Evolutionary	Not clear
Benchmarking	Keep pace	Weak

CHAPTER V

DISCUSSION

Combining the 8 selection criteria from the clients' perspectives and 8 key success factors from the 3PL service providers' perspectives reveals some overlap in the different perspectives. As mentioned in Chapter Four, 9 key success factors remain in terms of the general 3PL service provider, while the other 4 factors focus on the 3PL that has already transitioned to a 3PL and the case company which is still undergoing a period of transition. In this section, first we compare each factor of the different cases, and we also give some examples of the factors we propose. Second, we compare and figure out the gaps between the in-house logistics unit and the already transitioned 3PL service provider. Third, we analyse the existing gaps and figure out approaches to fill the gaps by dividing them into 2 categories: general 3PL and the transitioned 3PL.

General 3PL

1. Service

Service relates to breadth of service and to specific services. From the perspective of the customers, the 3PL service provides a good breadth of service, although this is not always preferred by the clients when compared to lower level services. It depends on the type of industry and the logistics functions that the clients run-themselves and outsourced to 3PL service provider. For example, the 2 manufacture in the case, one of them run the warehouse itself, only few logistics function such as transportation, upload and off load are outsourced. As the UK-based retail company whose core competency is marketing, full-skill logistics activities are outsourced to a 3PL logistics. 3PL1 and 3PL2 offer the high breadth of service to attract their customer, while 3PL3 offer its service based on the core business of its parent who involved diverse industry. 3PL3 is superior in back haul transportation such as consolidated less-than-truck transportation thanks to its parent's network coverage.

Specific Services. In order to increase the efficiency and frequency of the transportation, C1 Company cooperated with its 3PL service provider by innovating a

new pattern of track by several testing project. C2 Company emphasize that in order to meet the customers' requirement, the 3PL service provider has to offer the tailor-made service. With three subsidiaries, 3PL1 offers the chemical and dangerous goods transportation service. The company has earned trust from many multi-national chemical companies and has expanded its business into many large industrial estates. 3PL3 invests in some specific type of vehicles production in order to fulfil the requirement of its parent.

2. Relationship

Relationship refers to share risk and reward, cooperation between the client and 3PL by signing long-term contract.

A sustainable relationship was built based on the capability of innovating and developing cooperation between both side and matches in a same pace and extent. Aim at increasing total profit between both sides, C1 Company take measures to cooperate with 3PL to increase the efficiency in daily operation, for example C1 please its providers by expanse window time for increasing the upload and offload rate for the. And allowing its 3PL service provider to assign its employee to sit in the official operational place to adjust and control their employees for getting direct from adjustment working and receiving feedback after the problem happened.

One of the project of the company is set up among Customer, C2 Company and 3PL service provider. There is more than one manufacturing base in Thailand. Two of them are bonded areas. A self-developed customer system has been conducted with the help of the 3PL service provider for offering transportation services.

According to 3PL3, management of different customers is shared between external customers and the parent company. As the subsidiary of the company, 3PL3 is taken as general 3PL service provider in order to motivate it for increasing its level of service.

3. Logistics capability

Logistics capability relates to assert, on-time/in-full delivery, punctuality, logistics marketing capability as a 3PL service provider.

Quality management such as ISO is basic equipped as a present 3PL. KPI is taken to evaluate and develop the 3PL. ISO is adopt in the 3PL1 company, in order to

set up emergency plan, regular training and emergency rescue team to be ready for any accident and to stop contamination into the environment or community.

In term of asset which can be consider as hard skill of 3PL, 3PL2 own vehicles 35% of total operational vehicle, types of vehicle are divers from motorcycle to trailer 22 wheels carrying 32 pallets. 3PL1 holds100% of vehicle itself in high diversity as well as total warehouse space 34,000 sqm around the country. With its asset-right model, most of logistics asset are outsourced by the strong service network of more than 300 cooperated carriers, 3PL3 only invest in specific vehicle, warehouse, distribution centre, equipment and related software itself. Logistics capability of 3PL3 is improved based on servicing Parents' core business while service customers outside, through consolidate backhaul transportation. It is observed that the role of sales to the logistics marketing capability is important. Sales of 3PL have to contact and take care of the old customers while recommend price to the new customers. With the image of brand, 3PL1 develop its customers by different approaches. For 3PL3, the advantage of capability to search for back haul customers along the service network of parent. On-time in full delivery is more than 70% of the total delivery performing by the 3PL3. With the help of IT and GPS equipment, 3PL2 can hold the on-time in full delivery in the level of 90%.

4. Skilled logistics professionals

In terms of superior 3PL, skilled logistics professionals refers to the percentage of skilled logistics professionals to the total employees. Skilled logistics professionals reach 50% of total employee from labour to manage level in 3PL1 and 3PL2. High rate of professionals in the 3PL3 and 3PL4. It seems like the clients don't care the amount of the professionals.

5. Flexibility

It includes the attribute of fleet, respond to unexpected change in demand, responsive capability to the customers those ability to adapt to changing customers' requirements and circumstances. It also has the added financial benefit of matching savings and costs to the clients, it helps the client meet the customers requirement at the situation that demand is higher or lower than forecast.

For C1 Company, the situation such as suffering from the not adequate vehicle is happened normally. The solution that offered by the company is adjusting

depend on the situation faced, such as expanding the window time, decrease the cycle time by add the amount of forklifts.

Flexibility innovation. One of the project of the company is set up among Customer, C2 Company and its 3PL service provider. There are more than one of the manufactured base in Thailand. Two of them are bonded areas. A self-develop Customer system is developed by the help of the 3PL service provider for offering the transportation service.

With the efficiency of the information technology and the extensive transportation network, the 3PL3 is able to responsive the customers when the demand is changeable through the contact to the carriers within 90 minutes.

6. Internationalism

Internationalism refers to attributes such as overseas operations, capability of importing and exporting, distribution coverage, geographical specialization and coverage, international scope, market coverage, shipment destinations, and distance.

Internationalism is not important for clients who focus on the domestic market. For example, the core target market of C1 is domestic transportation and distribution. However, an American-based company C2, imports exports products and has a global distribution for its main logistics activities. In fact, most of the sole 3PL service providers of C2 are global 3PL.

Since 1969, 3PL2's employees have been more than 285,000 people and it has provided its service in 220 countries all over the world. For its contributions in the past 40 years, 3PL2 has become the global leader of the International express and logistics industry.

The geographic scope of the services and market coverage is a useful means for the evaluation of the performance of a 3PL service provider. Due to their geographic scope, a, 3PL3 provides superior service in cross-border service from Thailand to other GMS countries when compares with its competitors. 3PL3 is currently expanding its presence into overseas markets including Cambodia, Laos, Vietnam and South China by leveraging its expertise as well as customer and carrier networks. Furthermore, the Southern China Subsidiary of 3PL3 services is used not only by its parent company, but also by Thai-invested companies.

7. Integration of supply chain

The integration of the supply chain is vital as it optimizes the linkages between its key activities (linkages within a firm's value chain), in particular, optimizing vertical linkages (linkage between the firm's value chain and the value chains of its suppliers and customers).

The full range of logistics functions of C3 are outsourced to the 3PL service provider, which has a strong integration of its supply chain so it is in a good position to respond to all logistics activities. The VMI system is utilized in C2 for controlling the input of materials and the output of finished goods with a daily inventory.

Through its experience of transportation between factories and warehouses, product distribution to wholesalers and retailers, a moving service for factories, offices, houses and many government agencies in Thailand, 3PL1 has the responsibility for activities from suppliers to the end clients with a very well integrated integration supply chain.

With the right - asset strategy, 3PL3 invests only in a few specific vehicles to fulfil the specific transportation requirements of its parent company, so most of the vehicle are outsourced to a strong service network of more than 300 carriers. Thus there is a bridge between 3PL3 and its customers and carriers. It is obvious therefore that the efficient integration of the supply chain is a strong point of 3PL3.

8. Information technology and systems

Information technology and systems can be defined as the percentage of investment in IT and IS in comparison with the total investment of the company in IT and IS.

C1 invested in a self-run automatic warehouse that it invested in and constructed for the handling and controlling of the storage of goods. The C1 warehouse is automatic, it is equipped with 15,000 AS/RS equipment which has a capacity of 44,240 pallets which is equal to 3,200,000 cartons. There is a strong warehouse management team which the client owns, which means few logistic functions can be outsourced to 3PL, such as transportation, uploading and offloading. In the view of the Company, it is not an essential of the company. It is utilized for its assistance devices in tracking and tracing vehicles which have problems. Feedback from its operations is fast

and accurate. But the providers that use IT/IS prefer their performance, such as on-time/in-full delivery which is superior to other systems.

As the forerunner of 3PL in Thailand, 3PL1 invests 15% of its total investment in IT systems, compared to 5% for 3PL2. Types of IT and IS are utilized to fulfil customers' requirements including warehouse management systems, GPS, and for example, tracking systems and tracking labels.

As a 2PL and 3PL service provider, 3PL3 owns quite adequate types of IT and IS. Types of system and equipment and their usage include SAP, TMS, JEA, ITOOL, WMS, track and trace namely the command centre which amounts to a total investment of about 300,000,000 baht. The IT system is employed in dividing customers into customer segments, controlling the feedback from customers and complaints, conducting customer satisfaction surveys, and assigning and AE team to get in touch with customers. A command centre is set up for controlling the usage of vehicles, optimizing transportation plans both headhaul and backhaul, and to consolidate business like less-track-load from SME companies. There are various IS in operation, such as WMS for controlling warehouses.

9. Cost/Price

Cost refers to the total cost of logistics outsourcing. Its related attributes include price, cost reduction, low cost distribution, and expected leasing cost, operation cost, warehousing cost, and savings cost.

In order to get the optimal price, some companies evaluate more than one 3PL. The process adopted by C2 and C3 are as follows: first, give your requirements to the 3PL during the evaluation meeting; second, wait for the arrangement of the service project with the recommend price; third, the clients will discuss the service they can get and the price they can accept; fourth, negotiate and sign a contract or agreement.

To avoid destructive competition, 3PL1 chose not to propose a price to their competitors' customers, but to develop a not so well-known route, and to offer a new service and additional services at the same price instead. With strong bargaining power, 3PL3 has the advantage of a large fleet of trucks when signing negotiated agreements with carriers due to the overlapping rate of its parent company's headhaul transportation and backhaul transportation for other customers on the same route.

Transitioned 3PL

The transitioned 3PL is the specific factor that for the transitioned 3PL service providers according to the transitioned period which the Company has to focus on particularly. Unlike general 3PL service providers, 3PLs that transition from an in-house unit of a business group face serious challenges to improve traditional working attitudes and motivate the administrators and employees in the company. The organizational culture is of importance to the transition of a unit. According to the 3PL3, the parent company provides their main customers which amounts to more than 70% on average of the total operation of the 3PLs.

3PL3 transitioned from the year 1999 under a restructure strategy of its parent company because of the pressure from the external market environment. During the initial period of transition, the administrators at management level discussed the working process and added the lean concept to be learnt which aimed to reduce the number of processes and costs of the total chain. After the working process was stabilized stable, the IT systems for the management of the carriers were established to a large extent in the company itself instead of developing networks during this period. The company aimed to develop a sustainable relationship with the carriers from the initial period of transition. First of all, by developing a sustainable relationship with the carriers. Second, by training the drivers and labourers of the carriers. Third, through cooperating with carriers by following a policy of rewards and risks. In the year 2008, 3PL3 finished their restructuring and began to offer external services to customers outside the Business Group and, as a result, they made increased revenue in the following year.

During the period of transition, some measures were taken as shown below:

1. **Motivation**

Motivate old employees, especially at management level to form a new mind set in the initial period of transition and to maintain it in the future.

2. **Establishment of new team**

By providing training for labourers the drivers of the carriers, 3PL3 aims to set up working standards for monitoring the working situation, by cooperating with carriers and following a policy of rewards and risks. Numerous sales employees were recruited for strengthening the marketing capability, especially in the Department of

Logistics Solution in 3PL3 which worked on the development of new customers in headhaul and backhaul transportation.

3. Development of customers' segment

Market segments in the logistics industry are increasing based on the development of companies. The professional and core-business-related activities of the parent company are focussed on at first. Then 3PL3 focusses on the goods and the usual characteristics of transportation. Thirdly, transportation is provided for the SME companies based on a strong transportation network and a superior logistics marketing capability. Fourthly, 3PL3 is developing business tentatively based on the government strategies, such as the auto industry.

4. Continuous benchmarking

3PL3 is benchmarked with other competitors in the domestic and multinational market by the parent company in order to develop a system of incentives in their daily operations. Benchmarking is conducted for domestic competitors but prices are not compared. The company also tries to keep pace with the multinational companies by using the latest IT systems.

CHAPTER VI

RESULTS

This chapter aims to discuss the results of this research in order to fulfill the objectives mentioned in the first chapter. First, the status of the 3PL service market in Thailand is shown by the relevant research. Second, the key success factors for transitionning from an in-house logistics unit to a fully commercial 3PL provider are identified. Gaps are identified in the companies' capabilities and recommendations are made to the case study company in the third part.

The key success factors for transitioning from an in-house logistics unit to a fully commercial 3PL provider

In order to verify the key success factors for transitioning from a logistics unit to a fully commercial 3PL provider, a conceptual framework is developed in this study. From a literature review and interviews, 9 factors (namely breadth of service, relationships with customers, logistics capability, skilled logistics professionals, flexibility, internationalization, integration of supply chain, information systems and equipment and cost/price) and a group of 4 transitioned 3PL related factors are identified.

According to this research, the 3PL service providers with a high degree in breadth of service are not always preferred by the clients. From the interviews we found that most of the 3PL service providers give adequate and sufficient service when they enter the new market, however, the 3PLs that offer the most specific and most suitable service will be more dominant. From the clients' perspective, the relationship with a 3PL consists of a new relationship, a reliable tailored-made relationship which depends on the type of supply chain and the extent of outsourcing, so 3PLs have to adjust themselves to adapt to the requirements of their customers and maintain a sustainable relationship. In terms of logistics capability, ISO and KPI are the basic elements of 3PLs from the customers' perspective, but some 3PLs adopt the KPI of both internal and external companies in order to establish a good image in 3PL service provider selection. Besides, the on-time and reliable delivery is the factor on which the clients and the

parent company focus. The non-assets 3PLs employ high percentage of skilled logistics professionals out of the total number of their employees without managing the workers directly. With the assistance of IT, 3PLs can manage the vehicles in a flexible and efficient way. But it should be noticed that not every client wants high flexibility in 3PLs depending on the clients' type of goods or the extent of outsourcing. The international 3PLs that have established overseas subsidiaries which can service global clients with a rapid response, although this does not seem to be the essential factor which depends on scope of the clients' business. In this study, all 3 clients are located in Thailand and focus on the domestic market. 3PLs that play an important role in the supply chain which link the players are more significant for clients with a high degree of outsourcing. In terms of "investment in IT/IS systems and equipment", it is important for clients with a high degree of outsourcing, a wide scope of business and high dependence on 3PLs. In other words, not every client prefers 3PLs with IT/IS. All the clients in this study agree that the optimal price is considered and that they do not just chase the lowest cost. In addition, the companies with a high volume of backhaul (Such as 3PL3) have more bargaining power over price.

These dimensions (shown in Figure 8 and Figure 9) have been applied when studying the key success factors. In the matrix, the factors are classified as ranging from relatively low to high in both the dimensions of the parent company's perspective and from the external customers' perspective. This reveals that their main goals for the in-house logistics unit are to balance these dimensions. In addition, the highlighted box emphasizes the factors that should be developed prior.

This research is an exploratory study, dividing key success factors into subgroups by these two dimensions each with different demands on the parent company's perspective and the external customers' perspective. The low level of importance of factors from the parent company's perspective and the low level importance of factors from external customers' perspective concerning internationalism are due to the fact that most of the case companies' scope of business is domestic. On the other hand, the high level of importance of factors from the parent company's perspective and the low level of importance of factors from the perspective of external customers includes flexibility, the integration of the supply chain and logistics capability.

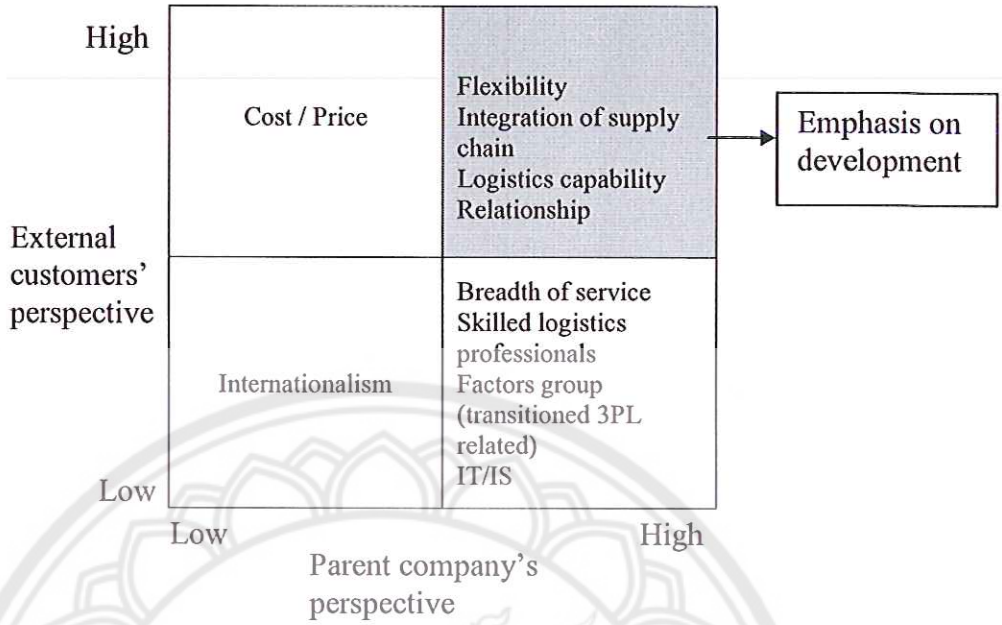


Figure 8 Importance level of key success factors for transitioning to 3PLs between external customers' and parent company's perspective (when the external customers' extent of outsource is low)

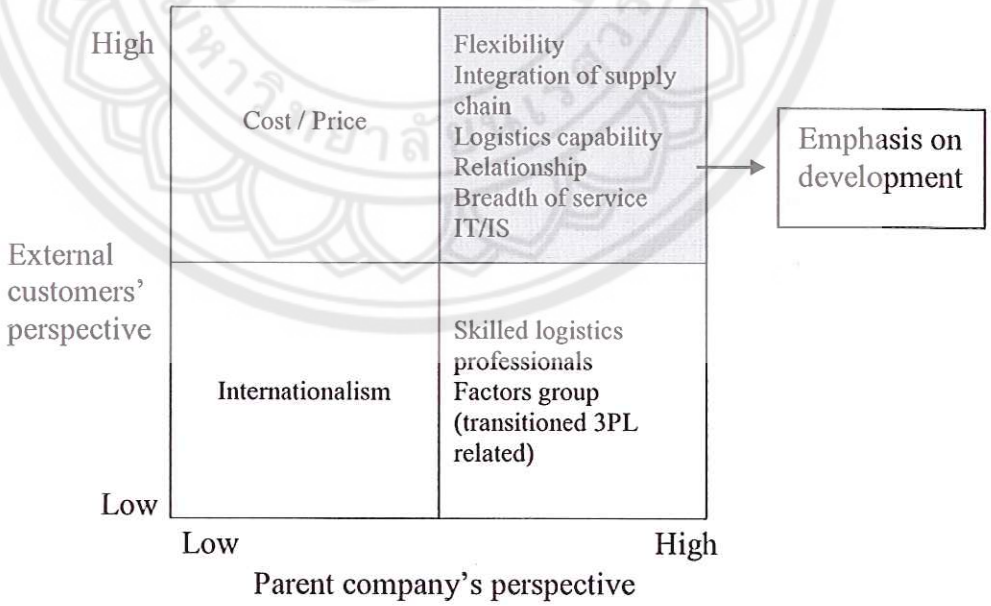


Figure 9 Level of Importance of key success factors for transitioning to 3PLs between external customers' and parent company's perspective (when the external customers' extent of outsource is high)

Cost/price and relationship are the factors with more customer focus but less parent company focus. Two specific factors such as IT/IS and breadth of service can shift under different conditions of clients. Breadth of service is significant for the client when the extent of outsourcing is high, but is not so important while it is low since most of the logistics functions of clients are self-run and it is easier for them to control the logistics performance. For example, tracking and tracing are only meaningful when transportation goes wrong. For the parent company, IT/IS are essential factors which concern not only tracing and tracking vehicles, but also customers relationship with the management and optimization of transportation assignments in order to increase the efficiency of the operations. On the other hand, IT/IS equipped companies are not essential for external customers in the selection of their 3PL service provider due of a low level of outsourcing. Those transitioned 3PL related factors are specific to the transition unit inside the parent company, which is of little importance to external customers, but it is of great importance to the parent company. The "Importance level of key success factors for transitioning to 3PLs between external customers and the parent's company's perspective" are shown in Figures 8 and Figure 9.

Identification of capabilities gap and recommendations

There are some special characteristics of the case company due to the transition from an in-house logistics unit to a general 3PL service provider or a transitioned 3PL representative by 3PL3. Therefore, this section will discuss two topics, namely, the capabilities gap 1) between clients, general 3PLs and transitioned 3PL (3PL3) and the case company, 2) between 3PL3 and the case company only.

For these two purposes, there are 30 aspects of capability gaps which have been identified and 29 recommendations made to the case company according to 9 key success factors that are related to the general 3PLs based on comparisons between clients, general 3PLs and transitioned 3PL and the case company as shown in Table 10. After investigating another 4 factors related to the transitioned 3PL during the period of transition, the author identified 17 capability gaps between the case company and 3PL3 which transitioned from an in-house unit and 16 recommendations are made which are shown in Table 11.

Table 10 Identification of the capability gaps and recommendations to the Case Company (General 3PL related)

		Key success factors	Case study company	
			Capabilities gap	Recommendations
General 3PL related	1	Breadth of services	1.Not sufficient service type due to the limitation of the parent company's business 2. lack of experience in management 3. Low overlapping rate of parent company's route of backhaul transportation	1. Service scope should focus on the type of industry and the outsourced extent of potential customers 2.Offer tailor-made service based on the real requirements of customers 3. Development of new customers to increase the overlapping rate of the parent company's route of backhaul transportation
	2	Relationship with customer	1.Company is still in dependent on parent company 2. Lack of sales 3. Innovation with customers is not enough	1. Develop the capability of innovating and developing cooperation with customers 2. For motivating the company, competitive mechanism should be added 3. More sales are acquired 4. Operation officials can be assigned to the customers' working place if it is permitted

Table 10 (cont.)

General 3PL related	3	Logistics capability	1. ISO is employed while KPI is not adopted due to the old management philosophy 2. Owns 10% self-run vehicle, the software system to manage warehouse is not available at present 3. Low on time/ in-full rate 4. Low accuracy of documents 5. There are physical differences in each warehouse that makes differences in operation 6. Lack of skills to assist in managing transport volume and sorting out which apply to external customers 7. Lack of skills and experience to deliver ton new destinations or with the new format 8. The working process and function between departments are still not clear	1. KPI is recommended for adoption in both internal and external quality management 2. Improve and guarantee on time/ in-full rate by utilizing the IT 3. Accuracy of documents should be improved with the help of IT 4. Set up standards of physical operation in different warehouses to improve efficiency in daily work

Table 10 (cont.)

General 3PL related	4	Skilled logistics professionals	1. 67% employees have knowledge of modern logistics by outsourcing the operational areas to the carriers 2. While employees managers level is 2% 3. Operational employees are not skilled enough to work at distribution centre with WMS and ASRS system in the future 4. Lack of driver's diligence and attention to the accuracy of transportation. 5. Lack of team work to manage the relationships with customers	1. Training projects about modern logistics concept are recommended to be set up for the development the skills of employees 2. It is necessary to improve and develop the behaviour of drivers 3. Recruit more skilled logistics professionals in the beverage industry 4. Set up work team to manage the relationship between company and customers
	5	Flexibility	1. Low flexibility in service and adjustment, less experience in solving problems 2. lack of preparation for investment in specific types of vehicles	1. Preparation of investment in specific types of vehicles based on the customers' requirements in cooperation projects 2. Increase fleet of vehicles by cooperating with more carriers 3. Make the maximum use of IT/IS to improve flexibility in the changing market

Table 10 (cont.)

	6	Internationa-lization	No international subsidiaries are set up yet	1. Connection with the local companies in the overseas target market is required to be built in similar countries first, such as neighbouring countries like Myanmar and Cambodia 2. The subsidiaries can be set up based on the requirements of the parent company
General 3PL related	7	Information system and equipment	1.Invest in some basic IT systems, diversity types of system are employed 2. Self-developed system for management of carriers 3. Offer parent company strategic utilization 4. Skills and attitude in providing information. tracking vehicles is still insufficient 5. no information system for management of customer relationships 6. The IT systems are utilized in the carriers' management already, but still do not make the most use of the systems yet, especially in the backhaul network analysis.	1. Improve the consultation capability to outside customers with a strong IT system 2. Invest in information equipment, such as GPS for tracking vehicles 3. Adjust the information system at present to link with the data then make the maximum use of the system 4. Make the most use of the systems by the sales employees for some logistics solution and design or develop the new connection with backhaul transportation.

Table 10 (cont.)

General 3PL related	8	Integration of supply chain	1. the linkage within the company's value chain is weak due to sales from the parent company being charged for transportation to end customers 2. No IT system and program for management of carriers 3. Training drivers and labourers of the carriers once a year but No KPI for management of carriers 4. No standard monitoring and measurement making it difficult to evaluate the carriers' performance	1. More connection between sales from parent company and sales from the company itself by exchange of information 2. Develop a sustainable relationship with the carriers from the initial period of transition based on the use of the IT system 3. Training the drivers and labourers of the carriers, set up working standard for monitoring the working situation. 4. Cooperating with carriers by using system of rewards and risks.
	9	Cost/price	1. Lack of experience in management of transport cost 2. Lack of bargaining power	1. Develop new customers outside especially the overlapping route with the parent's company for increasing backhaul rate 2. Increase the backhaul volume in order to negotiate the price with the carriers 3. Administrators of management level discuss the working process and add in the lean concept and make the total chain reduce cost and process

Table 11 Identification of capabilities gaps and recommendations to the Case Company (Transitioned 3PL related)

		Case study company		
	Key success factors		Capabilities gap	Recommendations
Transitioned 3PL	1	Motivation	1. Lack of motivation to change 2. Less reputation as a 3PL company which may be a weakness of the use of the service or lack of confidence 3. Little experience in attitudes and service as a 3PL services provider	1. Motivate the old employees especially the management level to build up a new mindset in the initial period of transition and maintain it in the future 2. Manage the change at multiple levels consists of employees' individual performance, organizational environment and business performance 3. Change the attitude of old working style in the company and try to see the company as one of the 3PL companies independent of the parent company.
	2	New team establishment	1. The number of capable sales is limited 2. Lack of headhaul and backhaul transportation analysis based on the IT systems 3. Training courses for employees should be held which through shifting department to understand the working process and detail so that they become more efficient in daily operations	1. Recruit sales employees increasingly to strengthen marketing capability 2. Establish logistics solution department to work on the development of new customers in headhaul and backhaul transportation.

Table 11 (cont.)

Transitioned 3PL	3	Customers segment development	1. The case company focusses on the logistics activities of alcohol products, however non-alcohol products are distributed by another subsidiary 2. The familiar segment recognition is not clarity 3. Transportation and warehouse resources are shared with other subsidiaries which makes the case company miss opportunities to deal directly with the end-customers 4 Not considered in the plan 5. The market segment of case company is still limited just to a few outside customers.	1. Focus on professional and core-business-related of the parent market, and fulfil the logistics activities totally both in alcohol and non-alcohol products. 2. Then the segment should be developed for products with known characteristics in transportation 3. Consolidated transportation for SMEs to grasp chance to get in touch with the end customers 4. Develop business tentatively based on government strategies
	4	Continuous Benchmarking	1. No advantages in the price 2. Maintains benchmarking, but still does not keep pace with multinational companies	1. Benchmarking with domestic competitors 2. IT systems should keep pace with multinational companies

CHAPTER VII

CONCLUSIONS AND LIMITATIONS

Motivated by the growing significance of 3PLs in an increasingly competitive global market and the requirements for superior performance and stable relationships between logistics subsidiaries that transition out and its business groups, this study proposes a conceptual framework of transition from an in-house logistics unit to a fully commercial 3PL service provider by identifying the key success factors of the transition behaviour. Using multiple case studies we have outlined a new framework for building and identifying new variables and relationships not envisaged in the original research while including some related dimensions from the empirical research. In this study, the approaches of using in-depth interviews, including sampling, data collection, analysis and memoing are shown in detail. Based on the framework of this study, 10 key success factors of transition from an in-house logistics unit to a fully commercial 3PL service provider are identified. From the literature review and interviews, 9 previous factors (namely, breadth of service, relationships with customer, logistics capability, skilled logistics professionals, flexibility, internationalization, integration of supply chain, information systems and equipment and cost/price) and their importance for the case study company are identified and 1 additional factor, which isorganizational culture is added.

In order to define the gaps between the in-house unit, the transitioned 3PL service provider and general 3PL service providers, the key points of the summary are presented. Finally, improvements for the case study company are recommended according to the key success factors identified by the author to provide guidelines for transitioning.

However, there are several limitations to this research which should be taken into account in any future research in this area. The industries which were selected for the case studies from the 3PL clients' side are limited to food and beverages, electronic and retailed industries and all of them are large companies. In addition, only qualitative methods have been utilized in this study. Future studies should focus on diverse

industries with different scales of business and use both a qualitative and a quantitative mixed method approach.

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