CHAPTER II

LITERATURE REVIEW

This chapter reviews prior research relevant to the studies that are necessary to know definitions of theory and model. There are 4 main sections included in this chapter which are:

1) The background of fourth party logistics

2) Roles of supply chain management in automotive and consumer product industry

3) Business Purchase Decision

4) Related Researches

2.1 The Background of Fourth Party Logistics (4PL)

Fourth Party Logistics Providers or 4PL is a logistics term coined and trademarked by Anderson Consulting (newly named as "Accenture") in 1996. There is controversy in the logistics industry regarding to this term. (Gattorna, 2003)

4PL is a new concept in supply chain outsourcing. It is the next level in logistics outsourcing and is considered as a path to achieve more than the one time operating cost reductions and asset transfers of a traditional outsourcing arrangement. A 4PL forms an alliance between best- of- breed third party service providers, technology providers and management consultants and this helps them provide unique and comprehensive solutions that go beyond the traditional domain of logistics outsourcing. According to Accenture, a fourth party logistics provider is a supply chain integrator that assembles and manages the resources, capabilities and technology of its own organization with those of complementary service providers to deliver a comprehensive supply chain solution. Thus a 4PL solution leverages the combined capabilities of both management consulting and third party logistics providers. To build up this strength, many third party service providers are going for collaborations mainly with consultancies and technology providers. Now corporations are outsourcing their entire set of the supply chain process from a single organization which will assess, design, make and run integrated comprehensive supply chain

solutions. This solution is focused on all elements of SCM, continuously updated and optimized technology and is tailored to specific client needs. (Kulkarni & Sharma, 2005) Table 1 overleaf contains Taxonomy of Supply Chain Outsourcing Solutions, with strict definitions provided for each specific type of service provider, categorized as either an LSP or New Business Model.

Type		Key Characteristics	Mode
Logistics Service Provider (LSP)	1. Prime Asset Provider	➢ Transportation asset provider, any mode	Single Mode Provider
		➢ Warehouse, Cross- Dock, Property Facility	
		➢ Manufacturing (Outsourcing)	
		➢ Packaging products	
	2. Third Party Logistics Provider (3PL)	➢ Integrated warehousing and distribution	Combination of Functions
		➢ IT infrastructure integration and support	
		➢ Localized data tracking	
		➢ Asset owner and asset buyer	
		➢ WMS systems	
	3. Lead Logistics Provider (LLP)	➢ Experienced logisticians	Several 3PLs managed by one Super-3PL
		➢ Combined & Utilizes advanced capabilities to optimize logistics & supply chain activities	
		➢ Manage across multiple (subordinate) 3PLs	
		➢ Decision support	
		➢ Continuous improvement	
New Business Models: 4PL; JSC; VNC (Network of Businesses)	4. Fourth Party Logistics Provider (4PL)	➢ Supply chain visionary	New Business Model
		➢ Supply chain planner and optimizer	
		➢ Deal shaper and maker	
		➢ Supply chain re-engineer	
		➢ Project management	
		➢ Service, System, and Information integrator	
		➢ Continuous innovation	
		➢ Technology as the prime capacity	
	5. Joint Services Company (JSC)	➢ Co- owned, co-managed	New Business Model
		➢ Small number of equity partners	
		➢ Agreed incentives and rewards, performance based	
		➢ Innovative culture	
		➢ Significant financial engineering to fund initial set-up and ongoing operation	
	6. Virtual Network Consortium (VNC)	➢ Dynamic capability network	New Business Model
		➢ Type of execution model with embedded alignment similar to 4PL& JSC, but without strict equity arrangements	
		➢ Provides particular supply chain solution at speed and at scale	
		➢ Highly connected processes across companied	
		➢ Shared investment- shared incentives	

Table 2.1: Taxonomy for Supply Chain Outsourcing Solutions

Source: Adapted from Gattorna (1998)

In general, the 4PL concept very much focuses on working together with client on transformation efficiencies. The solution provided is a unique combination of capabilities, thus redesigning not only the supply chain but sometimes also the overall business process and internal organization. It has been suggested that 4PLs will be absorbing logistics departments from their customers. Their services will be based on a percentage of the whole transaction or on a negotiated standard fee. (Dawe and others, 2002). In addition, 4PLs has developed around a problem or capability deficiency. (Gattorna, 2003)

4LPs or LLPs offer integrated logistics services; they take control over large parts of the logistics process and coordinate and execute the logistics functions across the supply chain. In addition 4LP operators manage the selection and subcontracting of other 3PLs. Most of the logistics solutions have a global reach and are customized. Within the 4PLs it is possible to see a wide variety of business arrangements going from long-term and formalized and co-operative agreements between partners (manufacturers and carriers) to more integrated models like joint venture, mergers and acquisitions. (Bade & Mueller 1999)

4PLs need to work very closely with the customer from day one-even before the bidding stage- in order to gain their trust and help them in the transition to the 4PL organization. This can represent a major challenge, as many customer segments have traditionally been more reluctant to delegate control of their supply chain, especially when the latter is core to their business. It is actually in these instances that 4PL activities are dealt with from within the organization, as the perceived value of using an external partner is lower. (Cabdoi, 2003)

Some people called 4PL as a complexity manager or super manager which would be an "on-purpose entity with shared risk/reward and would have multi-function management responsibility, including supply-chain planning, some information technology capabilities, the more traditional transportation and distribution disciplines, and a multi-provider management function." (Hoffman, 2000)

There are three models of 4PL which identified by Anderson consulting as following:

1) *Synergy plus* – the 4PL works with other LSPs and provides technologies and strategic skills that the individual LSPs lack.

2) *Solution integrator* – the 4PL works for the shipper and is the central point of contact with all of the LSPs and other service providers.

3) *Industry innovator* – the 4PL runs the supply chains for multiple industry players with a focus on synchronization and collaboration.

2.1.1 Stages of Fourth Party Logistics Solutions

1. *Reinvention*

At the highest level of fourth party logistics, is reinvention. Reinvention takes advantage of the traditional supply chain management consulting skills, aligns business strategy with supply chain strategy and is facilitated by technology that integrates and optimizes operations both within and across participating supply chain.

2. *Transformation*

The next level is transformation, which focuses on improving supply chain functions that are internal to the organization. This includes sales and operation planning, distribution management, procurement strategy and customer support. Technological leadership and excellence is leveraged with strategic thought, process redesign and organization change management to improve and integrate these supply chain activities by bringing about the best breed solution. The main thrust of a 4PL is bringing the best in breed applications.

3. *Implementation*

How to efficiently use and implement solutions provided by best in breed consultants to leverage the advantages of supply chain management is the next level. This includes business process realignment, technology and system integration across the client organization and service providers and transition of the operators to the delivery team.

4. *Execution*

The fourth party logistics provider takes the operational responsibility for multiple supply chain functions and processes. It covers transportation management,

warehouse operations, manufacturing, procurement, supply chain, information technology; demand forecasting, network management, customer service management, inventory management and administration. (Kulkarni & Sharma, 2005)

A lot of emphasis was placed on the 4PL provider being a single point of contact for the shipper, whilst becoming an integrated part of their business to the point of representing their Logistics department. Being non-asset based was also regarded as a fundamental feature of a 4PL provider as it would-in theory-ensure that they would be "neutral" in selecting the partners for the shipper. Figure 2 shows the transition to 4PL within the outsourcing market. (Cabdoi, 2003)

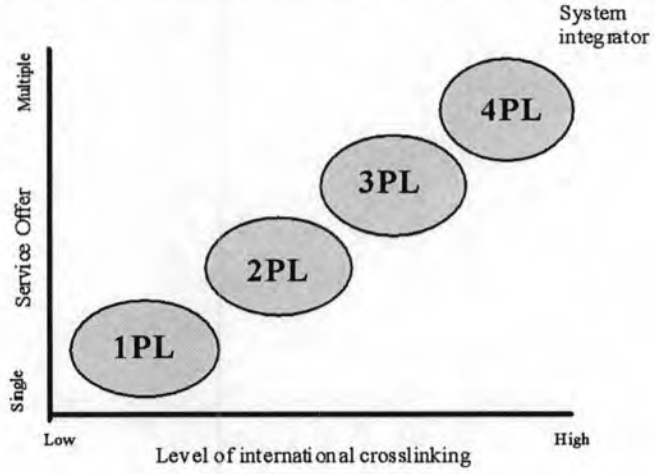

Figure 2.1: The transition to 4PL within the outsourcing market

Source: Frost and Sullivan

Besides, the increasing dissatisfaction with the services of 3PLs coupled with the greater complexity of their supply chains have turned their attention towards a "Superprovider" who is able to be a true partner, taking on a more strategic role whilst sharing the risk and rewards. This is why Frost and Sullivan believes that 4PLs have to be extremely flexible in coming forward to meet their customers' requirements, as it is the scope of the engagement with them, which will determine how the two parties work together. The scope of the 4PL deal will also be the result of the respective capabilities of suppliers and shippers.

The primary strength of a 4PL is the management of a variety of services, and the delivery of complex solutions on behalf of Clients, who themselves may be part of

the joint venture/management company. 4PL can develop around an e – marketplace as well as across industries, providing multi – client synergies. The client relationship is based on a detailed contractual agreement with a customized solution to a specific supply chain issue(s), and for the best results involves equity – based commercial arrangements. (Gattorna, 2003)

In summary, one of the biggest challenges of the 4PL concept is based around its very definition, as the level of understanding of how this entity works still varies amongst suppliers and customers. Some actually regard it as a potential threat not only to their business but possibly to their jobs as well.

4PL providers will have to convince customers of the real added value that this type of engagement can bring, as the perceived cost will be higher. At the same time, they will need to ensure that they can effectively deliver the promised value proposition across the model, thus implementing the 4PL fundamentals along the supply chain. (Cabdoi, 2003)

Using a 4PL, fourth party logistics service provider, is different than the traditional 3PL. The 4PL is a BPO provider. A 4PL is neutral and will manage the logistics process, regardless of what carriers, forwarders or warehouses are used. The 4PL can and will even manage 3PLs that a customer uses. This new international logistics service provider will develop solutions tailored to meet the unique and special needs of each customer, without regard to a parent company's service offerings and operations. The firm understands the key to success with process, people and technology. A good 4PL will have the shipper perspective and experience in what he does and offers to prospective customers. That means a better understanding of the complexity of the customer's requirements, present viable solutions and to have customer satisfaction and retention. A 4PL wants to position itself as an extension of and part of its customer. This BPO provider recognizes the role of and need for information technology in managing the process. Business process outsourcing is traditional outsourcing and more. Outsourcing is often taking a set of work, tasks, responsibilities or functions and transferring them to an outside service provider. Business Processing Outsourcing (BPO) involves that and more.

A BPO service provider brings a different perspective, knowledge, experience and technology to the existing function and can and will work with the firm to reengineer it into an improved or new process. It is an outcome-based result, not just a pure cost reduction issue. The new process will interact or be integrated into the company in a way that can bring value, even bottom line and shareholder benefits, to the client. (Craig, 2003)

There are some doubters in the logistics industry who think that 4PL is just a new marketing tool for an old service that is used by consulting firms to sell their services, and they support their argument by pointing to that as 3PL providers grew in sophistication and complexity, they started to offer some value added service that 4PL providers usually offer. There are many major differences between 4PL providers and 3PL providers, which are listed in table 2.2 (Al-Mugren , 2003)

Table 2.2: Major differences between 4PL providers and 3PL providers

4PL Providers	**3PL Providers**
1. Big picture focus	Narrow operational focus
2. Architect and integrator	Implementation and execution focus
3. Dynamic enterprise	Usually static and have one focus (i.e. warehousing)
4. Takeover the entire supply chain	Takeover one or more functions of the supply chain
5.Control and coordinate the operations of all 3PL providers in the supply chain	Has no control on other 3PL providers (if present)
6. Information nervous system backbone	Only one node in the system
7.Control information flow in the entire supply chain	Control information flow between the two areas that it connects only (i.e. supplier and manufacturer)

2.2 Roles of supply chain management in automotive and consumer product industry

2.2.1 Automotive Industry

The unique requirements from manufacturers in the automotive industry make handling their logistics operations—both inbound and outbound—more challenging than most manufacturing industries. The manufacturing pace at many automakers requires a constant stream of just-in-time products to keep production lines rolling and every day cost control becomes a bigger issue for automakers in a down market. The result is a list of logistics suppliers growing more customized to their automotive customers while those customers get more demanding in what they outsource to logistics organizations, both internal and external. Kevin Proudly, analyst at AMR Research, says there are two main strategies at work in the automotive industry's logistics operations. One school of thought is to outsource logistics operations to third party providers while another is to keep the logistics in-house or establish a separate, but dedicated firm to handle logistics. For example, to help Nissan Motor strengthen and consolidate its North American network, Nissan Logistics Corp. (NLC) was established to handle logistics and procurement for North American-made parts. NLC acts as a distribution network, arranging for the consolidation and transportation of parts from suppliers to Nissan's assembly plants in Mexico and Japan.

When Toyota Motor Manufacturing established its manufacturing plant in Kentucky in 1987, it needed two types expertise in its logistics operations: a provider with knowledge of the Japanese market, where many of its production parts were coming from, and knowledge of the U.S. market, where its new manufacturing was set to take off. Two of existing logistics providers combined to meet those needs: the U.S.-based 3PL APL Logistics and the Japanese maritime logistics firm Fujitrans. The result was Vascor (short for Value-Added Services Corp.), a third-party logistics provider specializes in both inbound ocean shipments and domestic milk runs. (Hannon, 2003)

Optimizing logistics concern automotive OEMs are increasingly turning to outside companies by 4PLs as to help them get the most out of every shipment and delivery. At last, an area where the 21st century hype is true: The emergence of breakthrough information technology (IT) tools creates the real possibility for a fully

optimized logistics function. This does not have to be a dream anymore. Through existing and near-term IT tools, every inbound train, truck and boat could be full all the time, and every shipment could reach its destination at the precise moment it's needed, without premium freight. Every outbound custom-built vehicle could take the shortest route to the customer and everything could be visible to everyone, all the time. The benefits are within reach; the problem is grasping them. Full optimization requires creating integrated solutions that address a wide range of complex issues. The total enterprise is 3-D chess -- it's too much for most internal logistics teams to shoulder alone. That is why OEMs are increasingly turning to the outside for help. In logistics industry lingo, these companies are referred to as 4PLs, or fourth-party service providers. They go beyond the traditional 3PLs of transportation companies by providing inventory and vendor management, IT solutions and a lot more. (Shea, 2001)

Automotive industry in Thailand

The automobile industry is one of the major businesses in Thailand. As table 2.2- 2.3 and figure 2.2 demonstrate the trend of car business in the past ten years starting from 1995 – 2005, indicating the economic crisis in 1998. The total car industry was sharply dropped almost by half from 1996 sales at 589,126 units to 144,065 units in 1998 or 76% declining. Automobile investors turned to export instead of only domestic sales.

During 1997, the world's largest car company turned to establish the production base in Thailand as well as World Trade Organization (WTO) and Asean Free Trade Agreement (AFTA) were facilitating the inter-trade and foreign investment. In the meantime, Thai government has enhanced the heavy manufacturing investment in Thailand. There are the industry's estates have emerged in the Eastern part of Thailand.

Table 2.3: Total Car industry in Thailand (1995-2005)

Year	Total Car Sales (units)
1995	571,580
1996	589,126

Year	Total Car Sales (units)
1997	363,156
1998	144,065
1999	218,330
2000	262,189
2001	297,052
2002	404,060
2003	531,708
2004	625,993
2005	703,410

Table 2.4: Total Car industry in Thailand (Jan – Jun 2006)

Month	Total Car Sales (units)
Jan	50,452
Feb	53,435
Mar	66,092
Apr	53,536
May	55,700
Jun	55,530

Source: Website: http://www.toyota.co.th,

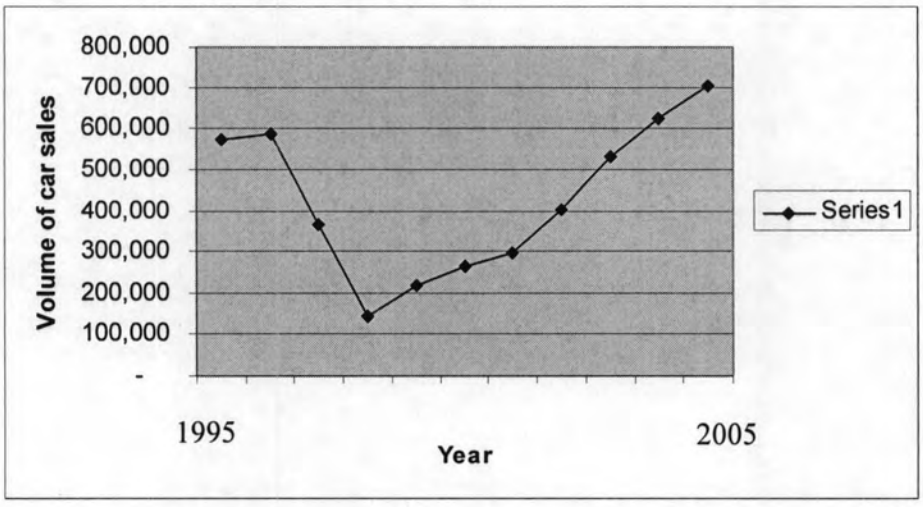

Figure 2.2: Trend of car industry in Thailand (1995 – 2005)

Source: Website: http://www.toyota.co.th

After 1998, the automobile industry was recovered from 218,330 units in 1999, 262,189 units, 297,052 units, 404,060 units, 531,708 units, 625,993 units, 703,410 units in 2005 respectively. However after considering the beginning sales in 2006, the first quarter sales were slightly declining and stabling in second quarter. It was a side effect from the economic and political instabilities at the present time.

For table 2.5 demonstrated the sale segmented by car companies in 2005 versus 2004, the total sales volume of all brands was 703,410 units in 2005 by having the growth rate 12% from 2004

Table 2.5: The comparison of Automobile Sales

BRAND	TOTAL 2005	TOTAL 2004	GROWTH RATE
SSANGYONG	458	122	275%
CHEVROLET	33,939	17,345	96%
SUZUKI	1,073	585	83%
VOLKSWAGEN	678	483	40%
PEUGEOT	238	176	35%
MAZDA	18,670	14,130	32%
MITSUBISHI	47,419	36,856	29%
MAN	9	7	29%
TOYOTA	277,954	234,177	19%
ISUZU	176,718	149,916	18%
BENZ	5,534	5,282	5%
SUBARU	60	62	-3%
FORD	23,449	24,718	-5%
KIA	3,169	3,445	-8%
SCANIA	220	246	-11%
NISSAN	41,868	46,908	-11%
HINO	8,650	9,889	-13%

BRAND	TOTAL 2005	TOTAL 2004	GROWTH RATE
HONDA	58,515	75,005	-22%
VOLVO	1,197	1,566	-24%
BMW	2,852	3,771	-24%
SAAB	40	54	-26%
JAGUAR	50	75	-33%
AUDI	61	96	-36%
LAND ROVER	294	493	-40%
CITROEN	161	276	-42%
SKODA	5	9	-44%
ALFA	68	123	-45%
SEAT	3	6	-50%
PORSCHE	58	134	-57%
CHRYSLER	-	38	-100%
TOTAL	**703,410**	**625,993**	**12%**

Source: website http://toyota.co.th

This is one of factor shown the car industry still growing. It is interesting that the top five of highest growth rate will not be the car marketing leader. This is a positive sign for small car companies to improve their performance by allocate the limited resource to maximize and drive the sales volume. For instance, human resource development, product innovation, R&D, and advertisement in the integrated communication to be the car company brand in the consumers' mind.

Most of Automobile manufacturers which had the production base in Thailand will have the majority sales in exporting in order to gain the economy of scale and controlling the cost of inventory. Normal practice is factory will produce base on the sales and marketing ordering plan to supply the current demand and forecast the production in future trend as well.

2.2.2 Consumer Product Industry

More than two-thirds (68 percent) of large U.S. consumer products companies are currently outsourcing some portion of their workforce, according to a new PricewaterhouseCoopers Retail & Consumer Industry Practice report released today. Consumer products companies, concerned about rising energy costs and tight margins, also anticipate lower growth rates in the months ahead. Executives surveyed in the first quarter by PricewaterhouseCoopers Retail & Consumer Industry Practice expressed less optimism about the domestic economy (53 percent were optimistic versus 67 percent among a cross-section of industries). Additionally, consumer products executives are expecting revenue growth of 6.2 percent over the next 12 months, well below the cross-industries average growth target of 8.6 percent. Large consumer products companies are tightening their belts, in part because of energy costs, said John Maxwell, leader of PricewaterhouseCoopers Retail & Consumer Industry Practice. Sixty-five percent of the consumer products executives we spoke to see the price of energy as a barrier to growth. In contrast, only 50 percent of the cross-industries executives we surveyed thought energy costs would hinder their growth. Forty percent of those surveyed named legislative/regulatory pressures as another major barrier. Concerns about higher interest rates and demand were voiced by 30 percent and 25 percent, respectively. (PricewaterhouseCoopers, 2006)

Retail and Consumer Product Goods (CPG) global supply chains (GSC) are driven by a customer-centric reality, global sourcing from low cost countries, smart border requirements, and logistics mandates (such as Radio frequency identification (RFID)) from large corporations and mass customization in a Just-In-Time (JIT) manner. Logistics and supply chain management (SCM) are thus expected to play a key role in CPG GSC and contribute dramatically to productivity growth of Canadian firms within the next few years. Manufacturers, retailers and wholesalers in CPG sectors need quality information on logistics and SCM costs as well as performance indicators in order to facilitate the development of best practices and benchmarks, justify investment and innovation, and monitor industry performance.

The retail and CPG supply chain is a complex world divided between large retailers establishing integrated supply chain practices with manufacturers and wholesalers, and smaller specialized retailers emphasizing customized or unique products and services delivered in a JIT manner to their customers. These two CPG

supply chain models differ while being triggered by the same force: responding to a customer centric environment. Customers are driving the demand and product/service levels by requesting complex customized products while at the same time expecting lower prices. The desire to react more rapidly to an ever-more demanding and less loyal customer, ever shortening profit and product life cycles, global sourcing to low cost countries and the need to avoid even smaller gross margins across the CPG supply chain are the key factors for developing logistics and SCM collaboration models. Retail and CPG logistics and SCM collaboration is also extremely complex due to both market pressures of delivering rapid response, and long lead times related to low cost country sourcing. In fact close to 88 percent of North American (NA) CPG players are expecting low cost country savings eroded by logistics and supply chain costs.

SCM processes and technology enable leading CPG supply chain players to develop new business practices that will fundamentally change the way their value chain plans and responds to consumers. Following are displayed some of the most important challenges faced currently by the CPG's supply chain, all related to inventory management. It is clear from next figure that Out-of-Stocks are considered by most actors in the CPG's supply chain as a key item to improve as goods move from different suppliers to the end customer. Too often, out-of stock items mean lost sales, and lost sales affect directly bottom lines as well as customer loyalty.

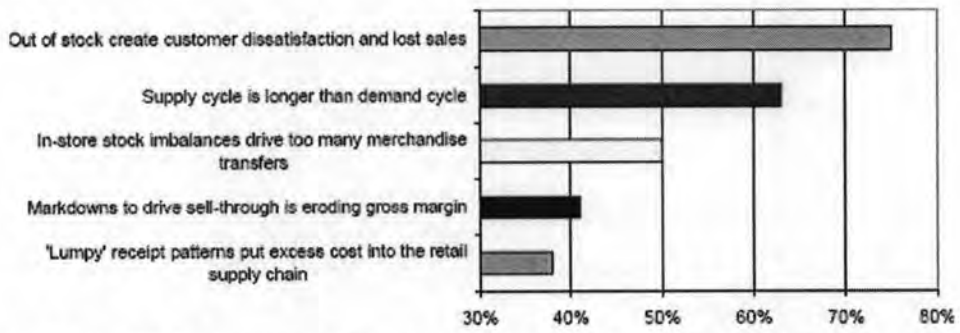

Figure 2.3: CPG's Inventory Planning and Replenishment Related Pressures

Another key challenge is the fact that the supply cycle ends up being longer than the demand cycle. This is not a new phenomenon, but what keeps the CPG's supply chain under pressure is that improvements on the supply side often cannot keep up with the erosion of the demand cycle by demanding customers. (Industry Canada, 2006)

2.2.3 Logistics Overview in Thailand

Today's competitive economies seek ways and means to enhance total spectrum of processes from production, storage, and distribution to delivery without comprising on quality and efficiency standards and more importantly without raising logistics costs. In this context, Logistics & Supply Chain Management becomes one of the major possibilities to reduce cost and enhance higher competitiveness for all processed products.

Logistics becomes a common term and is familiar to all businesses around the world who focus on bringing down costs involving in processing and transportation of goods, warehousing and distribution. Thus reducing costs sounds logical especially in Thailand, it is considered high representing of 20% of GDP or more that of other developed countries such as America, U.K., Europe or Japan.

Aspiring to become the regional hub for logistics, Thai government offers a whole lot of opportunities for both new comers and existing providers in the logistics field. Free Trade Agreements with China, Japan, India and USA will essentially put Thailand into a trade and investment hub for ASEAN countries. Meanwhile, set aside huge budgets for transport and logistics development. Opening up the skies is also another approach in making Thailand an aviation hub. The imminent opening up of the new Suvarnnabhumi Airport offers new investment opportunities for logistics transport and technology from other countries.

In Thailand, logistics and supply chain management has just been considered as the critical element for national competitiveness. To successfully develop the logistics and supply chain management in Thailand, it is important to understand the country's cost of logistics. In most developed countries, logistics cost as percentage of GDP has been collected, for example logistics cost of USA is 10% of the GDP, EU's is 7%, and Japan's is 11%. In Thailand, this information has never been collected, therefore the logistics cost of Thailand is unknown. However, 25-30 % of the GDP could be considered as a good approximate for Thailand's logistics cost. Though this figure is just an estimated percentage, it well represents the fact that the logistics system of Thailand is still far behind the developed countries.

There are 4 dominant parties, involved in Thailand's logistics. These parties are government, academics, corporate, and logistics- related service providers. The

large corporate and the logistics- related service providers, particularly the large ones, have been aware of the benefits from the good logistics management for a long time. On the other hand, the government, academics, and small companies have just realized about the importance of logistics during these past few years.

Also Thailand's SMEs represent a huge market for logistics, storage and supply chain management software and hardware, its rapid growth is at a rate of 20% annually. All courier services in Thailand are growing at double-digit rates and are increasing their investments in the Thai market. Manufacturers with new products for instance, Food processing needs total solutions that will help reducing cost. Those technologies, which provide possibilities in saving, would definitely have optimum opportunities in penetrating this highly lucrative market. (LOGISTICS ASIA, 2006)

The point of importance of Logistics is to be able to bring the goods to the customers in the way they want, the time and the cost that they required is the key of the business. However, this understanding is not acknowledged in Thailand even though we are part of the chain of integrated product network chain. The plan to support the growth in technologies, production, purchasing, distribution channels, distributions under Logistics and supply chain result in Thailand business progress and is core of the business in the future.

The logistics business in Thailand is at the early stage and not much attention is focused on the system but when faced with strong competition, Logistics is becoming very logic in most business. In Thailand, the logistics operators consists of Courier – documents and parcels delivery i.e. Federal Express, DHL, United Parcel Services, Yamoto and TNT, and in the automotive industries i.e. Honda, ANI Logistics, MMC Sithipol, Logistics Alliance, KPN – ST Logistics, CP – 7/11, etc.(Board of Investment report, 2003)

2.2.4 Policy trends in logistics

According to the 8 pervious Thailand's Economic and Social Development plans, logistics has never been delicately focused, The 9th plan, the current one, has concentrated on increasing the efficiency and lifting quality of the basis economic foundation, which includes transportation, telecommunication, energy and relevant

basic infrastructure. It, therefore, signals that the government has started to be aware that logistics is the key driver of the country competitiveness.

The National Economic and Social Development Board (NESDB) has started a project on logistics development initiative as a part of Thailand's competitiveness strategy. In addition, the National Economic and Social Advisory Council (NESAC) team works on the logistics development program as well. Both NESDB and NESAC report directly to the prime minister. These two agencies have worked separately with only occasional collaboration in information and experience exchange.

In terms of the logistics legislation from the view of the private sector, the issue of the current legislation fall into 5 categories, which are inconsistent regulations, no standard regulation in some area, out of date regulations not comply with the international standard, sand the zoning and city planning issue. (JETRO Bangkok, 2003)

2.3 Business purchase decision

2.3.1 The Bicameral Model

The purchase decision of the B2B can be explained by using the "bicameral brain model" portrayed in figure 2.4

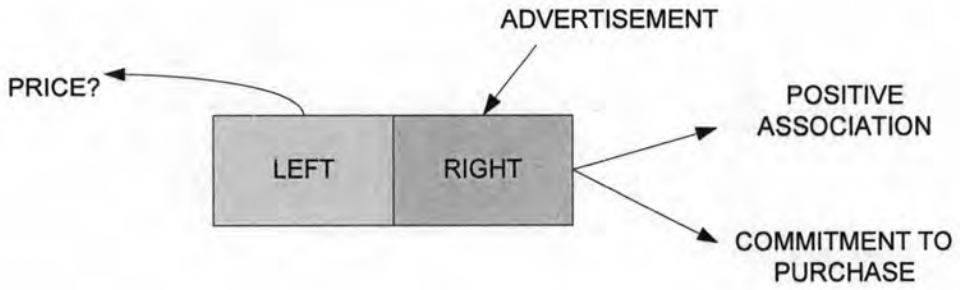

Figure 2.4: Simple Consumer Purchase
Source: Minett (2002)

The, now well-established, bicameral model of the brain postulates that the obvious anatomical division of the brain into a right and left half also reflects a

functional division in its operation: the left side is genetically designed to deal with what could be called the "hard" aspects of mental life: logic, calculation, and analysis, whereas the right side handles the "soft" side: intuition, images, pattern recognition, etc. Given our discussion of technology / fashion above, it can be simply stated that the left side of the brain handles the purchasing of technology products and the right side, fashion products. And as a result of this basic division of brain function, the right side tends to respond to the advertising channel (including direct mail, etc.) while the left side is employed to evaluate messages in the editorial channel.

Figure 2.4 considers a simple consumer purchase, such as a cosmetic (i.e. a product very close to the ideal-typical fashion end of our spectrum). A classic pattern for the first purchase of such an extreme- consumer product could proceed as follows:

- An individual might first encounter this product in an advertisement, perhaps even at the point of sale.

-The advertisement's images and copy may trigger attractive associations in the right side of the individual's brain, such that they may feel an immediate impulse to buy the product, even though they had never left any previous need for it

- As a result of this right-side's response, the individual may immediately purchase the product. If the right side's positive response has been very strong, the left side of the brain may not be engaged in the process at all.

-If the response was weaker, or if the consumer is cautious, the left side's role may simply be to consider whether the price of the product is consistent with the individual's disposable income.

2.3.2 The B2B purchasing process

We can contrast this with a typical B2B purchasing process. In terms of the bicameral brain, a summary of this process could be imagined as follows: having recognized a need for a particular type of product, the customer will then initiate a search for information as to what alternatives are available. Next, information on the nature of the offer for each alternative will be gathered and evaluated. (The extent and thoroughness of the information search and analysis will vary between both individual customers and the significance of the proposed purchase.) The information search and analysis activities are conducted on the left side of the brain, but (significantly) the argument here is that the actual decision to purchase and the commitment to remain loyal to a particular brand (which can be described as a leap of faith) are right-side

phenomena – even in the case of B2B goods. Once this commitment has been made in B2B purchasing, it then has to be justified to the purchasing group – which requires a return to left-side information analysis (see Figure 2.5)

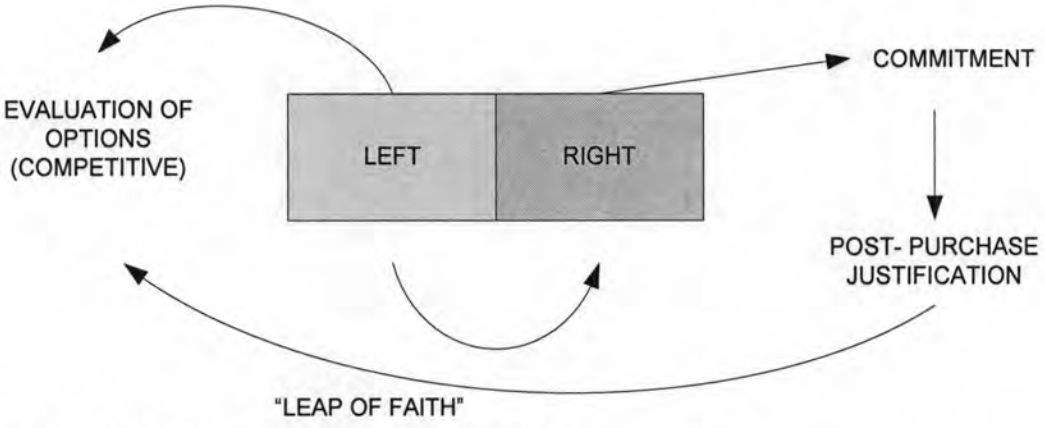

Figure 2.5: B2B purchasing: a leap of faith plus justification
Source: Minett (2002)

Our analysis requires a much more detailed account of B2B purchasing: what follows has been adapted from the work of Nail Rackham (2002).

Unlike most other "sales gurus," Rackham emphasizes from the start that what is important is not to develop a strategy of selling, but to deeply and fully understand the process by which B2B purchasers make their decisions. In truth, therefore, his model could more accurately be called a "B2B Purchasing Model. "The model clearly recognizes the "organizational dimension of B2B buying: he talks about the "purchasing channel" which consists of the following actors – gate keepers, influencers, decision-makers and sponsors.

The dynamic part of the model is Rackham's version of the customer decision process. He divides this into four phases:

- The recognition of need
- Evaluation of options
- Resolution of concerns and
- Implementation

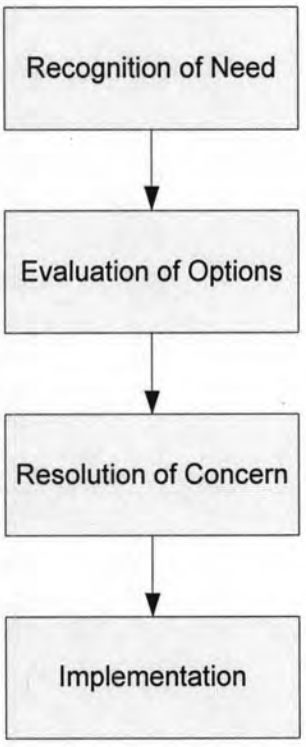

Figure 2.6: Illustrates Rackham's consumer decision model

Source: Minett (2002)

The recognition of need

The recognition of need arises when customers feel an acute dissatisfaction with the methods, systems, products, and/or suppliers on which they have been previously relying. Here, immediately, the group nature of B2B purchasing becomes significant: in the case of a major equipment purchase (or the initiation a pattern of serial purchases), it's highly unlikely that a single individual within an organization would decide what was needed without any consultation, discussion, and agreement with others in the organization. The fact that such discussions take place during the B2B recognition of need phase, makes this a left-side brain function.

Having established that the need for a new equipment purchase is valid, those responsible within the organization will become receptive to relevant marketing messages. These various messages from competing suppliers, will reach them, for example, in the form of advertisements in relevant trade journals or via direct mail addressed to them.

The evaluation of options

Having accumulated information about the relevant competitive offerings, the B2B buyer moves on to stage two, the "evaluation of options." The objective here is to identify which of these options is most likely to be capable of fulfilling the need which has been established. Rackham suggested that a major step in this stage consists of formulating and rank-ordering the "decision criteria" necessary to make this selection. These decision criteria should embody exactly what the organization wants this (for example) piece of equipment to be able to do and what features it will need to have in order to be able to do this . When this list oft criteria has been established, they then need to be arranged in order of importance according to the organization's purposes. Examples of such criteria could be: capacity per hour, speed of operation, speed of set-up, energy consumption, weight, corrosion resistance, temperature range of operation, etc.

1. Prospects' decision criteria – the key to sales

In the evaluation of options phase the objective of selling strategy is to understand and then try to influence the decision criteria which the prospective customer will use to make a choice between alternative options. Rackham commented that a very common error here is failure to fully understand the decision criteria. (This results, as we shall see, in a failure to differentiate the seller's products.) Given the goal of influencing and/or changing decision criteria, Rackham suggested the following procedure:

1. Uncover them. Use very thorough and structured questioning of the prospect in order to establish what decision criteria she is evolving.
2. Try to influence these criteria
3. Try to maximize the perceived fit between the prospect's decision criteria and the benefits which your company has to offer.

2. Criteria last for a life time

Rackham emphasized a very important quality which decision criteria possess – "They live on after a particular sale". When purchasers have put in the effort necessary to develop decision criteria for a particular need situation, these are likely to become deeply embedded in their minds: they will, henceforth, tend to use them every

time a similar need situation arises in order to make decisions about future purchases, and the influence of these "tried and tested" decision criteria can potentially extend over the entire working life-time of a purchaser.

Clearly, one of the most important tasks of a salesperson is to influence the decision criteria of their prospects. Rackham recommends three basic strategies for achieving this. Firstly, reinforcing criteria that you can meet. Secondly, building up incidental criteria, i.e. criteria that the buyer either just hasn't thought of at all or alternatively, has thought about but discarded – maybe prematurely. Thirdly, to reduce the importance of crucial decision criteria which you can't meet.

Here Rackham suggests four tactics:

- Overtaking
- Redefining
- Trading off or
- Creating alternative solutions

3. Matching differentiators with decision criteria

The obvious way to do this is to attempt to match the differentiators against the prospect's pre-established decision criteria ; for example , if the buyer has previously decided that speed is the most important feature of the new machine that he/she is looking for, while motor capacity is secondary and (given the acute need) price comes third as a consideration, they will probably buy the fastest machine, with an average motor capacity, assuming that they can get it at a price which seems reasonable to them. This option would thus be the best fit between the differentiators and the customer's decision criteria. Rackhham pointed out that in many cases (especially those which involve major capital expenditure for the organization); these processes are explicitly formalized through the formation of a purchasing committee, who then go through these procedures. But even in the absence of this formalization, he argues that all "major account" (i.e. in our terms B2B) buyers will go through these processes in some form or another and at some level of consciousness.

Resolution of concern

During the third phase of the B2B buying process, the resolution of concerns and Rackham's strategy advice to the salesperson is to uncover concerns and resolve fears. These will always exist because, he points out, the process of judging alternatives by comparing criteria with differentiators will always involve tradeoffs ; consequently, there will never be a perfect match. For example, it is highly unlikely that the product which has the best performance or the best quality will also have the lowest price. Customers, Therefore, have to make trade-offs amongst their decision criteria – if they originally wanted best performance and lowest price, then one of these will have to be sacrificed in favor of the other. Such trade-offs can often provoke anxiety – is the higher price really going to result in better performance? One method of helping prospects to dispel such concerns is to provide them with a comparative study of your product with a competitor's and ensure the post purchase service to clients. (Dwyer, Robert, Tanner and John, 2006)

2.4 Related research

Al-Mugren, Nezar A. (2003) studied in "What factors would lead a third-party logistics (3PL) customer to consider using a fourth-party logistics (4PL) provider?" In this research, Nezar has surveyed both LSP users and providers in USA regardless type of industry. Regarding to the result, all leading factors from the open end questionnaire are as following:

- Lacking the technology capabilities to integrate across its supply chain processes
- The need of supply chain integration, focusing on core competency
- Lacking the technology capabilities to integrate across your logistics service providers
- 3PL's lacking of the strategic expertise and IT resources required to operate across the entire supply chain and to truly integrate supply chain processes
- Using multiple 3PLs's in the same time
- Struggling to manage increasing levels of supply chain complexity
- The availability of specialized companies in supply chain competencies
- Customers' supply chain demands exceeding its capability to deliver
- Growing complexity of 3PL contracts

- 3PL's reaching their limit of what they can do to improve the supply chain performance and they cannot deliver continuous and ongoing savings
- Considering the supply chain critical to its success but not every supply chain process a corer competency
- Making better use of the capital dedicated to supply chain assets
- The economic downturn pressures

Furthermore, the major benefits that customer expect from a 4PL provider collected from respondents are as following:

- Single point of contact
- Supply chain system integration
- A central point of contact
- Consistency of operations, information, and processes
- Ease of administration
- Consistency of processes and operations across 3PL provider
- Improved supply chain visibility
- Cost efficiencies
- Better accountability
- Better coordination of the participants
- Grater customer focus on the strategic side of the business
- Lower costs
- Reduced administrative costs

According to major benefits above, they can be grouped into 4 major benefits as following:

1. **Cost**: consists of
    a) Cost efficiencies
    b) Lower costs
    c) Reduce administrative costs
2. **Point of Contact**: consist of
    a) Single point of contact
    b) Central point of contact

3. **Administration**: consists of
    a) Consistency of processes and operations across 3PL providers
    b) Ease of administration
    c) Consistency of operations, information, and processes
4. **Efficiency Improvement**: consists of
    a) Improved supply chain visibility
    b) Better accountability
    c) Better coordination of the participants
    d) Greater customer focus on the strategic side of the business

On the other hand, the research also revealed the obstacle of using 4PL model concluded as follow:

- Loss of control to an outside party
- Difficulty of assessing the financial savings to be gained through outsourcing
- The lack of management confidence in an outside party to deliver the same high level services that company employees provide
- Providers could give unreliable promises to customers
- Organizations could fail in selecting and managing logistics providers probably
- Provider could be unable to respond to changing requirements
- The difficulty of obtaining organizational support
- Losing touch with important information

Referring from above finding, researcher will use these finding to base questions in this research. In addition, researcher will conduct depth interview in order to expand more applicable to Thai's industry, especially in automotive and consumer product industry.