Master Thesis
Logistics Management in Retail Industry
A case study of 7-Eleven in Thailand

Master Thesis within International Logistics and Supply Chain Management

Authors: Latika Supasansanee
                 Patthaveekarn Kasiphongphaisan

Tutors: Susanne Hertz
                 Benedikte Borgström

Jönköping: June 1, 2009

Acknowledgement

There are many people involved in the process of our thesis and motivated us in one way or another and, as well, make our academic work more fruitful.

First, we are grateful to our kind supervisors, Professor. Susanne Hertz and Benedikte Borgström who have criticized and made comments through our work. As well, we are grateful for all the valuable discussions we have had.

Thank you for the supports from our families and friends. To your pull and push, your critiques and humors, and for those valuable views and opinions during our research, we are grateful.

Furthermore, we would like to express our gratitude to all our respondents who spent their valuable time answering our questions. Without their cooperation, our research would not be completed.

June 1, 2009, Jönköping

_____   _____
Latika Supasansanee   Patthaveekarn Kasiphongphaisan

Abstract

Master's thesis in International Logistics and Supply Chain Management

Title:	**Logistics Management in Retail Industry: a case study 7-Eleven in Thailand**
Author:	**Latika Supasansanee**
	Patthaveekarn Kasiphongphaisan
Tutor:	**Susanne Hertz**
	Benedikte Borgström
Date:	**June 1, 2009**

Keywords: 7-Eleven Thailand, Logistics, Retail   Convenience, Distribution Center and Warehouse, IT-Apply in retail store, and Competitive advantage

Introduction: In today's challenging competition in the consumer goods, the manufacturers strive for their products to reach final customers before they turn their heads to the rival's ones. This research attempts to understand and investigate how 7-Eleven company manages its logistics activities, distribution and applying information technology to achieve competitive advantages.

Purpose: The purpose of thesis is, in retailing industry and retailing convenience store's perspective, to identify and describe the way 7-Eleven manages and operates its retail convenience business focusing on several aspects; strategic fits, distribution and IT, which support 7-Eleven's activities and how they contribute to competitive advantages for the firm.

Frame of reference: Based on various sources of literature concerning competitive advantage and strategic fits, distribution related to marketing and retail, distribution centers and warehousing, and information system apply in retail store.

Method: The study is considered as qualitative single-case study. Data is collected from the interviews with several parties involve with retail convenience industry in Thailand. Secondary data is retrieved from the information system, research and reports, publication sources as well as internet sources. Lastly, data analysis is followed by the literature chapter.

Conclusion: By applying the synchronized strategies between supply chain members to adjust and modify the capabilities of firms, leads to supply chain benefits and competitive advantage for retail firm. The applications of IT and Distribution Centers enhance supply chain capabilities, reliability, and dependability which result in better service and market performance. They are also the keys that facilitate the operations of supply chain and retail store.

Table of Contents

List of Figures

1 Introduction

In this chapter, the authors briefly present background related to the subject of this research which are retail industry and convenience stores. The problem definitions are given followed by the purpose of thesis. The chapter provides a focus and limitation in order to define the scope and to outline the study. Lastly, the authors give the definition and description of the terms used in retailing and in this thesis.

1.1 *Background*

In today's challenging competition in the consumer goods, the manufacturers strive for their products to reach final customers before they turn their heads to the rival's ones. This challenge is influenced by for example globalization, deregulation, new business comers and convergence of the industries.

Retailing is a significant part of economic activities of both developed and developing countries' economies, with wholesaling and retailing value-added. The major goal of the retail industry or retail merchandising system is to influence possible consumers to purchase a particular products assortment at a particular retail store (Risch, 1991). Retail activities turn out to be one of the significant themes playing the role in supply chain management and logistics.

Convenience store is also one part of the store format in retailing business and the word convenience means the least amount level of the financial, physical, and mental expenditure required to conquer the friction of time, space and pecuniary loss inherent in any retail transaction (Risch, 1991). The product assortment consists mainly of goods for daily use and it is offered to customer on a relatively small sale area. Convenience stores need a flexible system with the ability to deliver products rapidly with small volume to diverse locations in an efficient manner (Ishikawa & Nejo, 1998)

In the late 1980s with the boom in the economy and at that Thailand became the fastest-growing economy in the world as well the next major developments in Thai retailing with the arrival of both convenience stores and discount superstores (Feeny, Vongpatanasin & Soonsatham, 1996). Feeny et al. (1996) states that the first branded convenience stores arriving in Thailand in the mid-1980s were not extremely successful since Thais' habits and pockets had not yet been adjusted sufficiently beyond shop-houses, and disposable income levels still fell short of the critical take-off point. Nevertheless, the mixture of more investment, economic growth, greater lifestyle of Westernization and most remarkably the timely arrival of 7-Eleven in 1989 has made 24-hour convenience stores ubiquitous near bus stops, in service stations and on many street corners (Feeny, et al., 1996)

The authors use a case study of chain convenience store, the company, namely 7-Eleven in Thailand as it resembles a good example of establishing logistical activities to conquer the hindrances for the success of the business as mentioned before. Compared to other convenience store brands, Family Mart and 108 shop , 7-Eleven in Thailand has ranked number one in convenience store industry where Thailand has a relatively inferior infrastructure and supply chain coordination. This has raised the authors' interests on managing challenging business. (See also figure 1.1)

Convenience Brand	Year 2009
108 Shop Convenience Store	900 Branches
Family Mart Store	538 Branches
7-Eleven Convenience Store	4,788 Branches

Figure 1.1 Comparing the number of convenience stores by brand in Thailand
Sources: Jitpleecheep (2009), Ueno (2009), and CP All Plc. (2009)

1.2 *Problem definition*

This study is focusing on only retailing industry and retailing convenience stores' perspective in Thailand. The subject was studied by using 7-Eleven as a reference. Retailing and distribution are concerned with product availability and retailers must be concerned with the flows of product and information into and through their companies in order to make products available to consumers (Spark, 1998). According to Fernie and Sparks (1998), it had been revolutionary in the 1980s in the history of logistics support to retail stores. The first step changed in managing the logistics function; retailers moved from direct store deliveries (DSD) to centralization of stock at regional distribution centers (RDCs) (Lawrence Christensen – cited in Fernie & Sparks, 1998).

Fernie and Spark (1998) state that technologies and IT were developed to facilitate logistical efficiencies in the distribution network and those technologies were either material handling (composite distribution, unitization) or of and IT nature which can improve the flow of information through the supply chain. Gattorna and Walters (1996) also mention that communication and information management are essential if decision making is effective. Therefore technology and IT are important.

The concern in retail and distribution are with the structure and management logistics channels (Cooper, 1988; Cooper et al., 1991; Boowersox and Cooper, 1992; Gattorna & Walters, 1996 – cited in Fernie & Sparks, 1998). The management task is concerned with the element of distribution mix (for example storage facilities and communication, etc), which have to be integrated fir successful retail distribution (Sparks, 1998). The authors will study and focus on the mentioned information which surely affects retail business (in this research which is retail convenience business) in one way or another.

1.3 *Purpose of study*

The purpose of this research is to, from retailing industry and retailing convenience store's perspective, identify and describe how 7-Eleven manages and operates its retail convenience business focusing on several aspects; strategic fits, distribution and IT, which support 7-Eleven's activities. It explores the competitive advantage that originates from those actions.

1.4 *Focus and limitation*

In order to scope the study and the research of the topic, authors need to make a clear focus and limitation to keep the study and research within the specific research structure. The study

scope is limited by focusing on a single case which is 7-Eleven Convenience Stores in Thailand. Furthermore this thesis, mostly focus on the process from 7-Eleven distribution centers to its stores. Moreover, the authors specifically frame the research between Distribution Center (DC) and the store. The process between DC and stores are discussed in details.

The selected case study is a convenience store chain, 7-Eleven in Thailand; therefore it may mainly reflect norms and practices considerably within the firm's environment. On top of that, the convenience store management policies on certain areas normally differ at each location since they are tightly tied to local customer needs. It could then give a deviated data from the retail convenience store in other firms or in other countries.

The authors also come to realize the risk of linguistic problems. Most of our literatures and empirical study are written in English nevertheless there are several empirical study that the authors have translated from Thai to English. The interviews as well were conducted by using Thai as a main language. Moreover some specific names in the thesis may sound unfamiliar. Nevertheless, the authors try to maintain the meanings as they will be understandable and traceable. However, the authors are both native Thai speakers, the ability to maintain the meanings are not hindered by the language difficulty.

The interviews were conducted by telephone, email and internet communications. The authors might not be able to observe the expression during the interviews.

1.5 *Disposition*

In order to present the overall of thesis's structure, authors will present you in a form of chart from the first chapter to the last part of the conclusion in chapter 5. Please see the figure below:
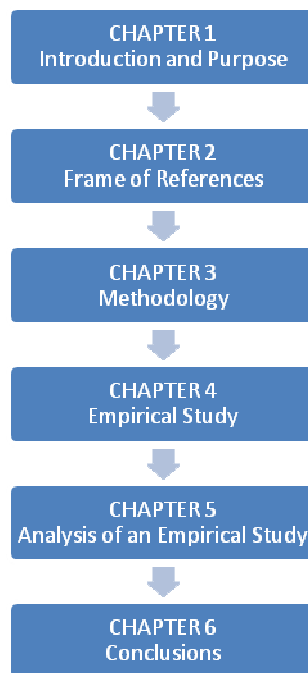
Figure 1.2: Outline of the thesis

Chapter 1 - In this chapter, the authors briefly present background related to the subject of this research which is retail convenience stores. The problem definitions are given followed by the purpose of thesis. The chapter provides a focus and limitation in order to define the scope and to outline the study. Lastly, the authors give the definition and description of the terms used in retailing and in this thesis.

Chapter 2 - This chapter provides frame of references related to the subject studied which are used throughout this thesis. The theories derived from literature reviews frame the analysis of an empirical study are presented in the choice of theories. Then each theoretical framework concerned with each dimension is presented.

Chapter 3 - In this chapter, the explanations of research strategy and research approaches used in this thesis are displayed. The method is mentioned and reasoned as well as the strategies exploited in this research. The authors then give details in data collection. Lastly, this chapter ends with the quality of thesis.

Chapter 4 - The forth chapter presents empirical study. The authors depict the issues relating to the subject studied which are the industry profile, the overviews of the business and its trend, the operation in many perspectives. The main objective of this chapter is to capture and present the case study as a whole.

Chapter 5 - Within this chapter the analysis of an empirical study is given. The analytical part will be conducted by using the framework of references in the second chapter and the method cited in the third chapter.

Chapter 6 - In this chapter, the authors give summary on the entire research thesis; discussion on the analysis part the answer to the purpose of thesis is clarified. The authors also give opinions on future research.

2 Frame of Reference

This chapter provides frame of references related to the subject studied which are used throughout this thesis. The theories derived from literature reviews frame the analysis of an empirical study are presented in the choice of theories. Then each theoretical framework concerned with each dimension is presented.

2.1 *Choice of Theories*

This paper has much concentration in 7-Eleven supply chain, specifically how supply chain management plays in delivering products and services to the end customer. In addition to this, the three main parties are involved: suppliers, Distribution Center (DC), and the stores. Firstly, the competitive advantage and strategic fit within supply chain, demonstrate the linkage of market and firm strategic management within supply chain and consequently how they lead to competitiveness. Secondly, the authors move to the importance of logistics and distribution and how these elements link marketing in retail industry. Thirdly, theories according to distribution are presented. Next, authors go through the warehouse and distribution center as they are the node of connection, how they are run, and lastly, theoretical frameworks on the Information Technology that connects chain members are explained.

2.2 *Competitive Advantage and Strategic Fit within Supply Chain*

Competitive advantages are the collection of superior competencies that create customer value (Morash, 2001). Firms deliver products and/or services which exceed the customer expectation, have more possibility to sell. According to Holcomb (1994), supply chain management now has emphasis on shaping competitiveness and profitability (cited in Tracy, Lim & Vonderembse, 2005). While some strategies create competitive advantages may be easy to imitate by competitors, the competitive advantages that routed from the chain efforts are harder to copy. Effective supply chain, thus, offer the opportunities to create sustainable competitive advantages (Cooper et al., 1997; Higginson & Alam, 1997 – cited in Tracy et al., 2005).

As firms play along together in the supply chain to achieve competitive advantage and win the orders at the bottom line, all members of the chain need to synchronize their strategies toward the end customers' direction. This means supply chain strategy and competitive advantage must fit together and the consistency between customer priorities and supply chain capabilities must exist (Chopra & Meindl, 2007). In order to achieve the strategic fit, firms should be able to understand and wisely exercise their customer needs to match their service requirements. Chopra and Meindl (2007) add that firms are able to design supply chain in delegating tasks as to outperforming competitors from other chains by matching the competitive advantages the supply chain have with what of the customers desire.

The Council of Supply Chain Management Professionals (CSCMP) defines Supply Chain Management (SCM) as "the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities." It also includes coordination and collaboration with channel partners which help to integrate supply and

demand management within and across companies. (See http://cscmp.org) The activities from each point to point of the chain may be counted as the flow of value-added activities.

Morash (2001) pinpoints that not only the matching value consistency between supply chain strategies and capabilities should be prevailed, but also the harmonized performance that foster member firms' success.
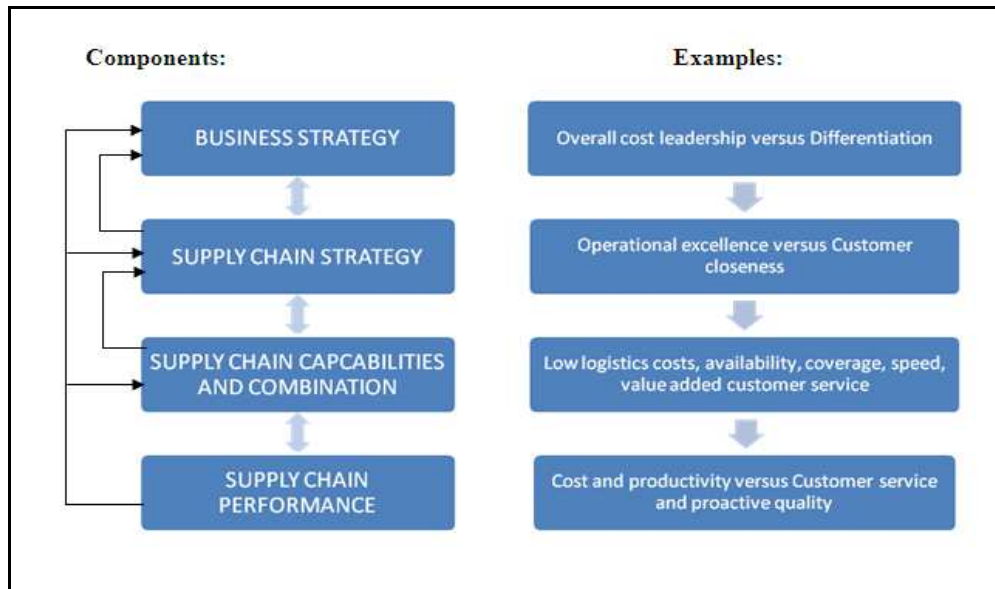
Figure 2.1: Model of Supply Chain Strategy, Capabilities and Performance.
Source: Morash, (2001).

Supply chain strategy is divided loosely into two categories which are 'Operational Excellence' and 'Customer Closeness'. The former focuses on supply side efficiency, dependability, and reliability as they reflect the total supply chain efficient and effective in operation, the total cost reduction. The latter highlights on the agile supply chain to cope with demand on customer side and best meet the requirements (Morash, 2001). The flexibility, proactive quality, value-adding service, and dependability are the main focus, which needed the intensive communication.

Firms should consider where the strategic fit zone is for the supply chain and to the individual members by reflecting upon two dimensions; the responsiveness and the demand from customers. Here the word 'responsiveness' comes across on cost basis as shown in the Cost-Responsiveness Efficient Frontier below;
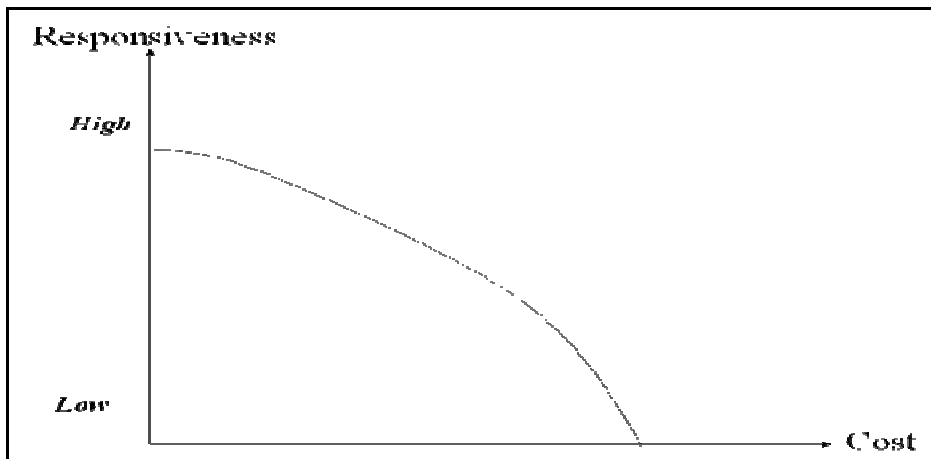
Figure 2.2: Cost-Responsiveness Efficient Frontier.
Source: Chopra and Meindl, 2007
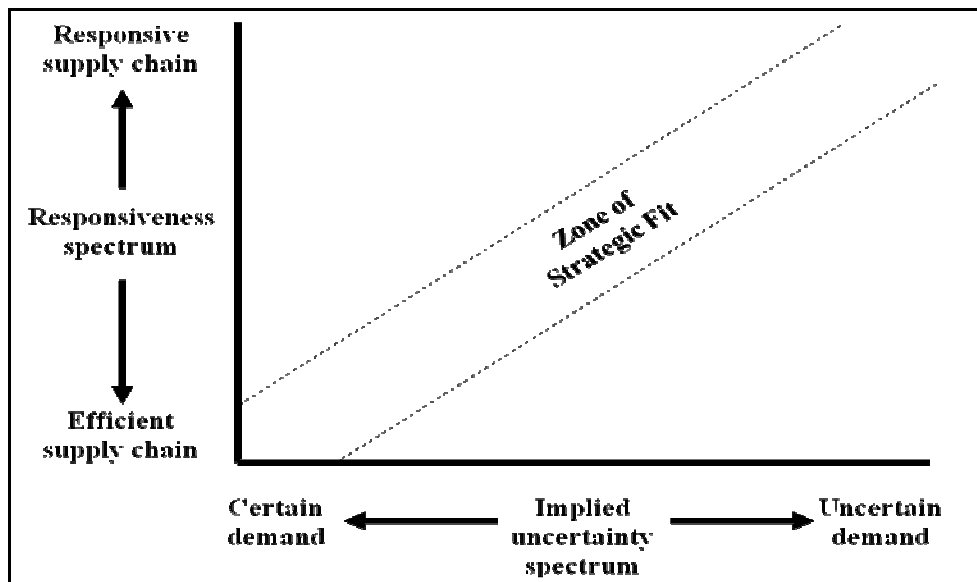
Figure 2.3: Uncertainty/ Responsiveness Map.
Source: Chopra and Meindl, 2007

In Morash, Dröge and Vickery (1996) paper, suggests the responsiveness to the market has a positive performance when comparing to competitors' performance. They also add that the logistics capabilities yield both competitive advantage and the firm success. However, as seen in the responsive and cost relation, responsiveness comes with cost.

While the market channels are brought up by a set of interdependent organizations that together put product and service available for consumption, draws those organizations closer in engaging the distribution of supply to the consumption point (Coughlin, Anderson, Stern & El-Ansary, 2001, and Anderson & Coughlan, 2002). The responsiveness and the demand need to be balanced. This can be supported by the work of Christopher and Towill (2002) on Marks and Spencer (M&A), a well-known UK retailer, and its retail strategy which suggests "designing and managing supply chain to deliver just what the customer wants once again appears to be the key to business success." Chopra and Meindl (2007) comment that rather than the implied demand and the responsiveness chain engaged; other elements affect strategic fit as well. These elements are the number of products and customer segments, the

7

product life cycle and, lastly, the changing competitive environment. All functions in the value chain must support the competitive strategy to attain strategic fit to achieve the position in a strategic fit zone. Tracy et al., (2005) remark on SCM based on the integration across business operations, is essential to customer satisfaction, value creation, exceptional returns, and sustain competitive advantage.

In order to accomplish the effective chain, firms need to work on the collaboration over the firm's boundaries. According to Frankel, Goldsby and Whipple (2002), the successful collaboration factors tested on grocery industry are (1) willing to innovate and change; (2) understanding the other's business; (3) common goals and objectives; (4) appropriate measures and incentives; and (5) information sharing. They explain the understandings of other's business can enhance the mutual value-added activities which are often lie in logistics competencies in matching or complementing the capabilities of others' so as to jointly improve performance. The example here is Efficient Consumer Response (ECR). Needless to say that one element facilitates the success in the collaboration is 'Information Sharing'. Frankel et al. (2002) indicate the information sharing need not to be sophisticated, rather it should be effective in the speed and accuracy of that information. The concern about information sharing is that it is used to make better decisions especially, in the chain performance. While the information system eases the integration, the success on building competitive advantages in chain is relied upon people and process. Whipple and Russell (2007) state the collaboration level in supply chain has positive correlation with the success of chain members or the 'pay-off' in a collaborative relationship. However, they point out that company must determine the collaborative level of each relationship based on characteristics to best suit the potential of positive outcome. Put in another word, there is no 'right formula for all' continuum; the appropriateness depends on each relationship. The closeness and type affect have implication in information sharing. Firms can design their relationships, shape them and determine the degree of sharing information between each member, to enhance the effectiveness of the performance of the whole chain.

The importance of matching strategy and the success of supply chain give authors understanding of the awareness in supply chain related to logistics activities. The implications regarding to 7-Eleven Thailand has on its supply chain members, and how it moves logistical strategies to enhance the performance of the firm. The interpretation involved within this framework enables authors to assess the importance 7-Eleven concerns with its supply chain and logistics management. On top of that, how the firm exert the fitness to accomplish the competitive advantages.

2.3 *Distribution Related to Marketing and Retailing*

Distribution is the physical trail and legal title that products and services take between production and consumption (Coyle et al., 2003). Kotzab (2005) also define distribution as the total sum of all activities and related organizations, which are necessary to assurance a successful connection between production and consumption. According to the latter definition, distribution must pay an important role in retailing industry; therefore retailing obviously plays part of distribution. Retailing is a part of distribution and is closely connected with the concept of marketing channel (Coughlan et al., 2001- cited in Kotzab and Bjerre, 2005). Distribution always occurs while connecting a point of consumption with a point of production by overcoming certain differences in time, quality, quantity and space (Kotzab,

2005). Moreover, distribution activities are typically called flow of activities and refer to the flow of products, information and so-called goods (Specht, 1998- cited Kotzab & Bjerre, 2005) (See also the figure 2.4: Distribution Flow Model).

This notion of flows makes distribution and marketing channels process-oriented and different combinations of these flow activities, completed by different organizations within the channel lead to different channels outcome (= performance of the channel)(Kotzab, 2005).

Distribution Flows	Discrepancies			
	Space	Time	Quantity	Quality
Flow of goods	Transfer of goods from point of production to point if consumption			
	Moving from point of origin to point of destination	Holding inventory	Break Bulk and/or consolidation activities	Changes in the nature of a product
Flow of nominal goods	Transfer of legal tender from point of consumption to point if production			
	Transferring of payment	Advance financing by different institutions loans, etc	Collecting and sharing of the payment	Conversion of modes of payment and securities
Flow of information	Transfer of information form point of production to point if consumption and reverse			
	Transmission form point to point	Collecting, storing and planning	Collecting and partitioning	Condensing, commuting, interpreting, adding

Figure 2.4: Distribution Flow Model
Source: Ahlert, 1991 –cited in Kotzab & Bjerre, 2005

The management of such flows and/or marketing channels can be systematized in a range between markets (by intermediaries, so- called indirect distribution) and hierarchies (by in-house, so-called direct distribution). Direct distribution involves company sales forces, facilities, and/or direct shipments to customer and indirect distribution involves the use of wholesalers, distributors, and/or third parties to supply the products t customers (Coyle et al., 2003)

Retail occurs whenever distribution is organized over the market and can be explained from an academic point of view in two different manners (Liebmann & Zentes, 2001-cited in Kotzab and Bjerre, 2005) which are:

- Retailing is a set of function that adds value to products and services which are sold to ultimate customers. It is considered as functional understanding;
- Retailing is a specific institution within a marketing channel that performs retail functions. It is considered as institutional understanding.

According to Kotzab (2005), he explains retailing as an exchange activity with the purpose of connecting a point of production with a point of consumption, where the exchange processes refer to three different kinds:

- First is marketing processes, which include all activities that provide a customized set of products and services as demanded by customers/consumers
- Second is logistics processes including all activities which help to shift or transfer the specific set of products and services to the markets
- The last one refers as easing processes, which includes all activities that facilitate the purchase.

From the functional point of view, the functional understanding of distribution outlined distribution processes occur in any circumstances, as well if in different members in a marketing channel are inter-connected (Kotzab, 2005). In the case of inter-connections, these relationships occur as co-productive relationships and as the interactive combinations of the three basic distribution processes create a value in a multi-directional level and the result of such as inter-connection, is called value constellation, which is understood here as distribution value constellation (Normaan & Ramirez, 1994- cited in Kotzab and Bjerre, 2005). In this sense, retailing/wholesaling is defined as the result of distribution value constellation in a marketing channel.
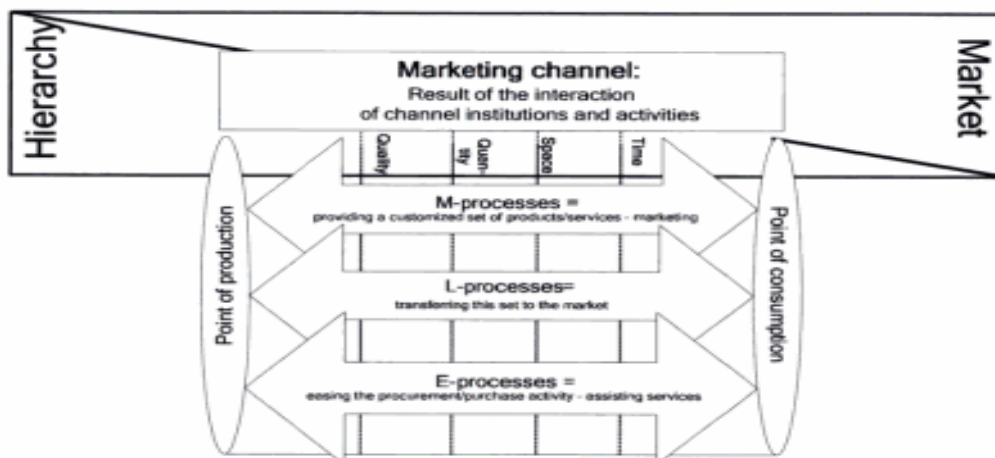
Figure 2.5: Functional Understanding of Distribution
Source: Kotzab & Bjerre, 2005

According to Kotzab and Bjerre (2005), the market-driven marketing channel organization, specific institutions specialize in the performance of these processes, which can explain the institutional perspective of retailing. From the institutional point of view, retailing can be defined as an exchanged activity relating to different flows but performed by specialized organizations (Anderson & Coughlan, 2002). For this reason, retailing exists in many variations (Kotzab & Bjerre, 2005) (See also figure 2.6: Institutional understanding of retailing)

Production					Consumption
	Distribution = f (M, L, E)				
	Wholesalers = B2B-Distribution	**Retail =** B2C-Distribution			
		Store-Based	Distance-based	Hybrid	
		-Department Store -Hyper Market - Supermarket - Etc.	- Mail Order - Internet -TV-shopping - Etc.	-Street markets - Party - Etc	

M = Marketing, L = Logistic, E = Easing

Figure 2.6: Institutional Understanding of Retailing
Source: Kotzab & Bjerre, 2005

The outcomes of these variations are called retail store format and refer to characteristics, such as the overall economic classification (retailer for end users, wholesalers for professional clients), also the way the processes are performed and which input factors are necessary for the completion (e.g. store-base, distance-base or hybrid) or the use of the marketing mix (Kotzab, 2005). Additionally to make it completion, there are factors that need to be considered such as retail mixes.

2.4 *Distribution Channel*

Distribution channel management is very critical for the firms when they decide to enter one or more markets. Distribution channel structures are not difficult to change; however, primary wrong decisions might lead to dreadful results for the organizations. In accordance with Gattorna and Walters (1996), depict that distribution channel management follows a structured approach, using criteria which help to evaluate optional channel structures during which alignment (compatibility), trade-offs and channel relationships are considered. Increasingly, the roles of logistics service firms are included in the decision process for distribution channel, especially when they are a dominant element within the supply chain.

As Jobber (2001) mention, all products whether consumer products, industrial products or services require the use of distribution channel. To describe more about distribution channel, Etzel, Walker and Stanton (2004) present that a distribution channel consists of the group of people and firms involved in the transfer of title of products move from producer to final consumer or business user. According to Coelho et al., (2003), most international firms would prefer to run a direct channel distribution however instead the firms themselves are forced to use intermediaries and most distribution channels consider and consist of middlemen, but some do not (Etzel et al., 2004).

A channel that has only producer and final customer, with no middlemen providing assistance is called "direct distribution", whereas a channel of producer, final customer, and at least one level of middlemen represents "indirect channel" (Etzel et al., 2004). The most common distribution channels for consumer goods can be seen from figure 2.7 which illustrates major channels of distribution. (See figure 2.7 - Major Channels of Distribution)
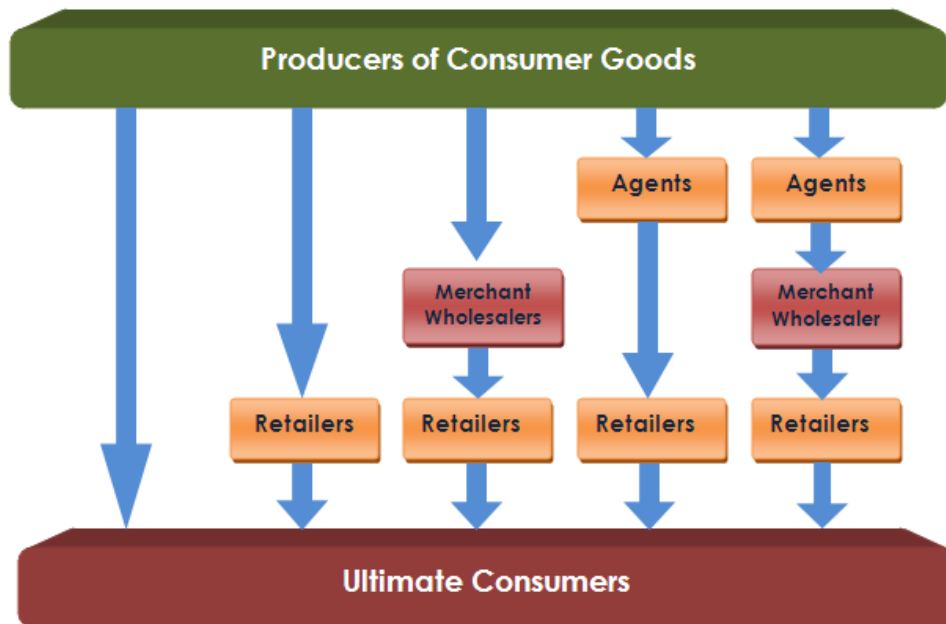
Figure 2.7: Major Channels of Distribution
Source: Etzel, Walker and Stanton (2004)

Producer → Consumer:
The shortest, simplest distribution channels for consumer goods involves no middlemen

Producer → Retailer → Consumer:
Goods ship directly from manufacturers and agricultural producers to large retailers.

Producer → Wholesaler → Retailer → Consumer:
If there is a traditional channel for consumer goods, this is the one normal way. The small retailers and manufacturers by the thousand find this channel the only economically feasible choice.

Producer → Agent → Retailer → Consumer:
Instead of using wholesaler, many producers prefer to rely on agent middlemen to reach the retail market, especially in large-scale retailers.

Producer → Agent → Wholesaler → Retailer → Consumer:
To reach small retailers, producers often use agent middlemen, who in turn call on wholesalers that sell to large retail chains/or small retail store.

After designing a channel, next thing that firms must consider is, on the intensity of distribution which means how middlemen will be used at the wholesale and retail level in a particular territory (Etzel et al., 2004). In accordance with Etzel et al., (2004), there are three degrees of intensity.

Figure 2.8: The intensity-of-distribution Continuum
Source: Etzel, Walker and Stanton (2004)

Intensive distribution: In intensive distribution producers sell their products or services through each available store in the market where consumers might reasonably look for the products or services by projecting the ultimately consumers demand satisfaction from convenience goods immediately, and they will not adjourn purchases to find a particular brand (Etzel et al., 2004). In the intensive distribution is commonly needed for convenience products and as well Gattorna and Walters (1996) states that it is usual to use intensive distribution with, for instance, everyday use products (such as food, newspaper, basic stationery items, etc.), and it also obtains for consumable industrial products such as abrasives, lubricants, drill bits, etc. Moreover, they mention that the objective of the vendors are to offer convenient ,which mean local and easily obtainable, availability for the reason that the pattern of purchasing is typically short-term with end user maintaining low (or nil) inventories.

Selective distribution: In this kind of distribution, producers sell their products through multiple wholesalers and retailers (but not all possible)in a market, where consumers might reasonable look for it (Etzel et al., 2004).It usually involves a limited number of intermediaries within a limited market area (Gattorna & Walters, 1996). Therefore, with this type of distribution, the firm does not have to dissipate its efforts over too many outlets. This means that selective distribution enables producers to gain adequate market coverage with more control and less cost than intensive one. Examples of consumer goods which are appropriate for selective distribution are, various types of clothing and appliances, office equipments, DVDs, computers and cameras, etc (Etzel et al., 2004, and Kotler, 2000). Selective distribution covers the broad and wide area of the market exposure between intensive and exclusive distribution and moreover in the selective distribution is selling through only those middlemen who will give the product special attention (Perreault & McCarthy, 2003).

13

Exclusive distribution: In exclusive distribution, suppliers agree to sell their products only to a single wholesaling middleman and/or retailer in a given market (Etzel et al., 2004) and it is just an extreme case of selective distribution which is the firm is selling through only one middleman in particular geographic area (Perreault & McCarthy, 2003). Gattorna and Walters (1996) state that the partnership requires mutual support in developing sales and supporting services to the final users such as maintenance plan and emergency service requirements. They also mention that exclusive distribution is found for the customer product groups of which large inventories are required to offer consumers a wide selection. This kind of distribution is used when producers be interested in to maintain and control over their service level and service outputs offered by the retailers (Kotler, 2000).

Gattorna and Walters (1996) depict that the nature of the channel intermediaries selected will match the product type with end user or customer expectation. Moreover firms should decide on the number of intermediaries to use at each channel level (Kotler, 2000).

2.5 *Warehousing and Distribution Center*

Warehouse and distribution center (DC) are very important nodes in a supply chain network; they perform valuable functions that support the movement of materials, storing goods processing products, de-aggregating vehicle loads, creating stock keeping unit assortments, and assembling shipments (Langevin & Riopel, 2005). These are the activities commonly performed in warehouses and distribution centres. The major challenge to DCs and warehouse, both today and tomorrow, is related to workforce issues, for example, staffing, training, scheduling and job design (Ackerman & Brewer, 2001-cited in Kotzab & Bjerre, 2005). Moreover, firm must also consider facilities that help the firm to cut handling costs.

Coyle at el. (2003) present the definition of warehousing and distribution center that warehousing is the storage of goods, whereas distribution center precedes a post-production warehouse for finished goods held for distribution. Therefore, warehousing and DC basically have the same function which is goods and products storage. According to Higginson and Bookbinder (2005), a distribution center is in fact, a specific type of warehouse" as well as Frazelle (2002) who refers distribution center as distribution warehouse.

2.5.1 Warehousing

New cars can be stored outside on the dealer's lot, fuel oil can be stored in a specially designed tank, coal and other raw material can be stored in open pits but most products must be stored inside protective building (Perreault & McCarthy, 2003). According to Higginson and Bookbinder (2005), "Warehouses store all products in four cycle (receive, store, pick and ship)". Firm can decide and select among the different kinds of specialized storing facilities, and the right choice might assist the firm reducing costs and serving customer better (Perreault & McCarthy, 2003). The use of specific type of these storing facilities is aimed to reduce/cut costs and smooth the distribution as well as operation to enhance service level to the customer.

Private warehouses is a storing facility owned or leased by the company for its own use, additionally, most manufacturers, wholesalers, and retailers have some storing facilities

whether in their main building or in different separate location (Perreault & McCarthy, 2003). In the eyes of Perreault and McCarthy (2003) depict that firms use private warehouse when a large volume of goods and prodcuts must be stored regularly, nonetheless private warehouse can be expensive in dealing with the changes needs as It might be difficult or impossible for the extra space to rent to others.

Public warehouse is an independent storing facility. Public warehouse usually provides all services that a company's own warehouse can provide (Perreault & McCarthy, 2003). They also cite that public warehouses are functional and useful for manufacturers who are required to maintain stock in many different locations. The first and most significant reason for using public warehouse is financial; it requires no or limited capital investment by the company (Coyle et al., 2003) (See also figure 2.9: A Comparison of Private Warehouses and Public Warehouses).

Characteristics	Private Warehouse	Public Warehouse
• Fixed Investment	• Very high	• No fixed investment
• Unitcost	• High if volume is low Very low if volume is high	• Low: charges are made only for space needed
• Control	• High	• Low managerial control
• Adequacy for product line	• Highly adequate	• Maybe not convenient
• Flexibility	• Low: fixed costs have already been committed	• High: easy to end agreement

Type of Warehouse

Figure 2.9: A comparison between Private and Public Warehouses.
Source: Perreault & McCarthy, 2003

2.5.2 Distribution Center

Perreault and McCarthy (2003) state that a distribution center is a special type of warehouse which been designed to fasten the flow of goods and avoid unnecessary storing goods. Today the distribution center concept is widely used by firms at all channel levels and also many products buzz through a distribution center without ever tarrying on a shelf, workers and equipment immediately sort the products as they come in hand subsequently move the products to an outgoing loading dock, and then to the vehicle which will take the products to next stop (Perreault & McCarthy, 2003). Seeing the information latter distribution centre speeds up the distribution process and reduces the complication in storing goods.

According to Higginson and Bookbinder (2005), DCs handle most products in two ways, receiving and shipping rather than storage and also DCs hold minimum inventories and of predominantly, high-demand items. Nevertheless many of works cited use interchangeably the two terms, warehouse and DC.

15

Since the 1980s, three supply-chain trends have had a major impact on the distribution center (Higginson & Bookbinder, 2005):

- Reduction in the number of warehouse;
- Greater emphasis on the flow of goods rather than their storage;
- Increases outsourcing of warehouse/distribution center activities.

2.5.3 Warehouse/DC Operational and Facilities

The basic warehouse operations are movement and storage (Coyle et al., 2003).The cost of physical handling is a major storing cost. Moreover goods must be handled once putting them into storage, and removing them again when they are to be sold (Perreault & McCarthy, 2003). Warehouse also includes highly specialized storage facilities such as bean and grain elevators and refrigeration facilities etc (Coyle et al., 2003) as well as distribution center. In this chapter, the authors will use warehouse and distribution center interchangeably.

2.5.3.1   Warehouse /DC activities

Perreault and McCarthy (2003) has mentioned that more competitive markets , improved technology, coordination among firms, and efficient new distribution centers, those bring such a huge improvement to physical distribution ,(physical distribution or PD is a common name for logistics which provides time and place utility and make possession utility possible), areas and yet biggest challenges may be more basic. A storage/order fulfillment or warehouse/DC operation has the following activities according to Coyle et al., 2003: (See also figure 2.10: Basic Warehouse Operations).
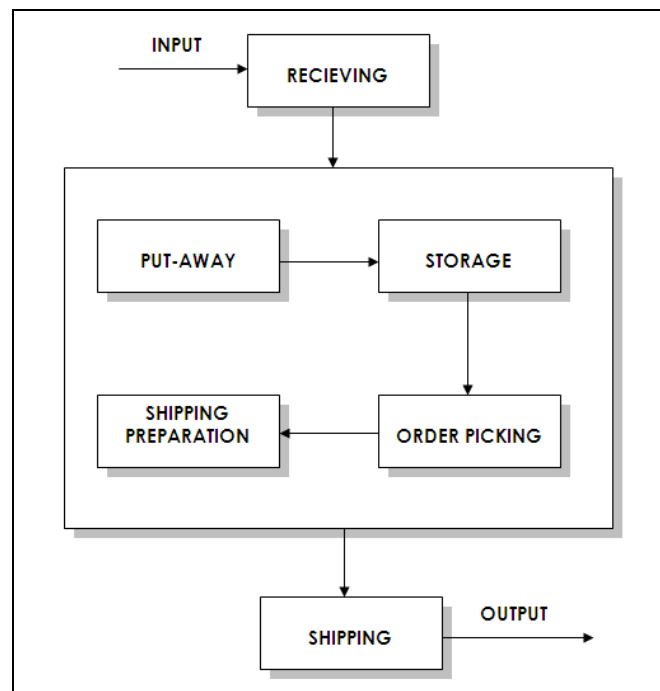
Figure 2.10: Basic Warehouse Operations
Adapted from Coyle et al., 2003

(1) Receiving operation - This operation means receiving goods and products from the transport network into the warehouse and at the receiving operation point, the inbound carrier is scheduled to deliver the good at a specific time so as to improve warehouse labor productivity and unloading efficiency. The items/ SKU are checked against the purchase order (P/O) in this process;

(2) Put-away operation - This process involving indentifying the product, typically scanning the product's barcode, identify location for the items and moving the products and goods to the appropriate location. furthermore in this operation, deposit and withdrawal in an inventory program of identified storage or pick positions and updating inventory file as well as inventory control(such as a SKU inventory cycle count, etc) needed (Mulcahy & Sydow , 2008);

(3) Order-picking process- In order-picking process requires warehouse personnel to select the items ordered by the customer or manufacturing operation from the storage place or area;

(4)   Shipping process - The process concerns with loading goods for shipping to the customer or to the production line. The final movement process occurs at the shipping operation. After outbound carrier arrives at the loading dock, the goods and products are moved to the loading dock from the staging area and into the carrier's vehicle;

Lastly the warehouse information system will update the information reflecting the removal of the goods and products from warehouse inventory, the shipment of products to the customer (Coyle et al., 2003). It facilitates the process of shipping.

2.5.3.2   Warehouse management system (WMS)

Lots of companies are implementing warehouse management system that assists the warehouse manager in controlling various warehouse operations, and track inventory or service to the customers at the lowest possible operational costs (Coyle et al., 2003, and Mulcahy and Sydow, 2008). WMS is the computer software which tracks, plans, controls, analyses, and records the flow of goods and products through warehouse or DC. Additionally it eases the flows in many ways (Higginson and Bookbinder, 2005)

Mulcahy and Sydow (2008) point out some of warehouse options which are (1) *Store and hold or conventional or (2) across-the –dock warehouse operation.* Besides those options, warehouse type has different SKU, customer order and information flows that are the foundations for a future warehouse with WMS program.

2.5.3.3   Electronic data interchange (EDI)

Another information technology that has a major role for the firm in helping the flow of information is Electronic Data Interchange. This EDI has been used in transportation industry more than twenty years by mainly large shipping and railroad companies, freight forwarders, trucking companies, and others (Stefansson, 1999). Perreault and McCarthy (2003) state that EDI is an approach that puts information in a standardized format which is easily to share between different computer systems. Besides, the purchase orders, shipping reports, and other

paper documents are replaced with computerized system. Comparable to Stefansson (1999) the EDI definition is that EDI itself is a simple concept through which information is retrieved from for example purchasing application and translated in a standard format message, subsequently it is transmitted through a network to the seller. Then the seller will interpret the message back into his/her in-house format and submit the message to the sales application automatically. According to Stefansson (1999), he also mentions that the companies using internet and companies using EDI are believed to be at least 1:10 out of the total companies and this fact is acknowledged as a huge potential for using internet as a communication method in communicating business information between firms in the future. With EDI, customers can transmit their order information directly to suppliers' computer (Perreault & McCarthy, 2003). Therefore, EDI makes communication easier for suppliers and customers and obviously shorten order cycle time.

According to Kotzab (2005), he proposes three components of EDI which are (1) EDI-Enabling Software, (2) Communications and Networks, and (3) Standard Messages. Having EDI-Enabling software in order to translate incoming/outgoing message to a specific format while two components, communications and networks, and standard messages, ensure the electronic communication between the partners, so that the involved computers can exchange information in the highly demanding structure.

2.5.3.4 Vendor Management Inventory (VMI)

According to Disney and Towill (2003), different industries and market sectors have coined different terms for VMI, but most are based essentially on the same idea is that VMI is a supply chain strategy where the vendor or supplier is given the responsibility of managing the customer's stock. For clarity the terms ''distributor'' for the customer in the VMI relationship and ''manufacturer'' for the supplier or vendor in the VMI relationship will be used. Vendor-managed inventory (VMI) is one of the most widely discussed partnering initiatives for improving multi-firm supply chain efficiency. According to Waller, Johnson and Davis (2001) continuous replenishment or supplier-managed inventory was popularized in the late 1980's by Wal-Mart and Procter & Gamble (P&G). VMI became one of the key programs in the grocery industry's "Quick Response"

Waller, Johnson and Davis (2001)state that various published accounts have explained VMI benefits that range from cheaper new product introductions to reduced returns at product end-of-life, but the literature often fails to explain just why these benefits have resulted from VMI.

2.6 IT-Application for Retail Store Management

Strategic management views technology as a source for creating sustainable competitive advantages (Carr, 2004). Kotzab (2005) states that technology can change the structure of an industry by setting up entry and exit barriers. According to Perrillieux (1987) –cited in Kotzab and Bjerre, (2005), there are three basic types of technology:

- Cais technology has no impact on the industry structure as any player in an industry can use it without any problems. It represents simple technologies. The example of

information technology in distribution is a fax machine which can be used for information transmission, order transmission, etc;

- Key technology has a huge impact especially in a specific situation in a market. Not every player can or has applied this type of technology. One example of key information technology for distribution is the EDIFACT-standards that allow paperless communication between distribution process members;

- Pace maker technology has potential to influence the competitive situation of an industry. Referring to distribution, RFID or eXite are counted and used as relevant pacemaker information technology.

IT-based retail management (see outline in figure 2.11: Essential Elements of IT-driven Retail Management) is a weapon to retail business.
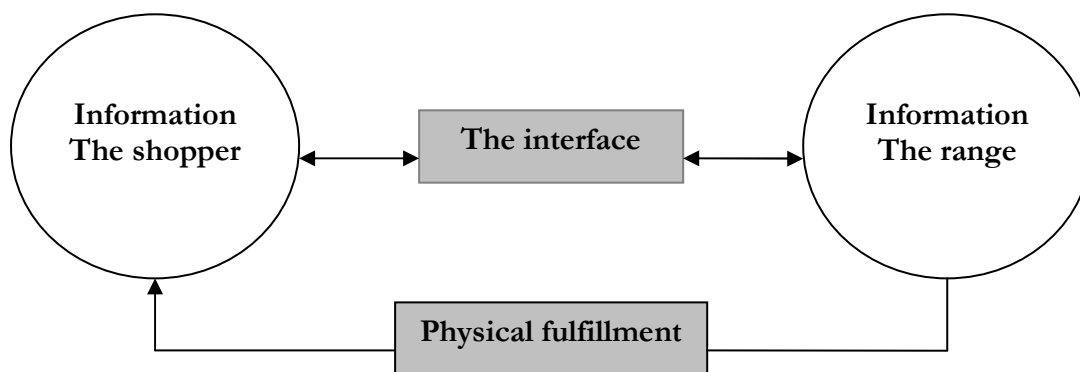
Figure 2.11: Essential Elements of IT-driven Retail Management
Sources: Kotzab, 2005

For instance, IT in the form of in-store media assists and helps to achieve in increasing the average time spent in the store and the number of aisles visited etc. Even so, there are electronic price systems and information systems which been used within a retail store. In this section, the authors present several of electronic price and information systems used within a retail store which can be suited for the studied company 7-Eleven for the thesis.

Electronic price tags and shelf label: Kotzab (2005) presents that most of the price tags (of all products on shelves in a store) are in paper form. Whenever prices of products are changed, the price tags have to be replaces. The mentioned activity refers to an assortment which can take hours and hours, moreover it is not an error-free activity (Leigh, 2001). By using electronic shelf labels, retailers can avoid these inconveniences by execution from back office which can be transmitted using radio frequency to the shelves. This is not only leads to efficient use of manpower in the store, nevertheless also increasing customer satisfaction as the prices shown on the shelves are the same prices as shown at the cashier desk (Mullholand, 2002–cited in Kotzab and Bjerre, 2005).

Point-of-sale system (POS): Dai (2004) presents that within POS system, it makes possible for the store to keep records of who (what kind of customers) bought what kind of products and when. Besides the POS system, including the Electronic Order Booking (EOB) device and Terminal Controller (TC) that are introduced later, became the "General Store

Information System" (Dai, 2004). In the eyes of Li (2003), a point-of-sale system is cash register that monitors customer purchase.

Dai (2004) explains that the EOB device represents the exact same data as in the order book. The person who places the order can look at the portable screen and order while walking along the aisles. Each store transmits the order information online to headquarters through the TC and small computers.

The technologies include scanning data, data warehousing, and data mining as well help to facilitate an understanding of customer requirements (Harrison & Van Hoek, 2005-cited in Kotzab & Bjerre, 2005). For example on the sale floor, mobile self-scanning and self check-out systems are applied in order to make the payment process more efficient (see example of IT application in store, Figure 2.12: IT-applications in the Extra Future Store Rheinberg, Germany), (Kotzab & Bjerre, 2005).

Area	Technology applied
Inventory Management	RFID for Goods handling, delivery to store, Warehousing in the back store, Smart Shelves, Transportation of goods into the sales room
In-Store information	Employee portal "mymetro" Personal Digital Assistant, Tablet PC's, In-Store Communication
Comfort Shopping	Personal shopping Assistant, Loyalty Card/Extra Future Card, Info Terminals, Intelligent Scale, Electronic Shelf labeling, Electronic Advertising Displays
Cashing/ Checking out	Self Checkout, Comfort Payment

Figure 2.12: IT-applications in the Extra Future Store Rheinberg, Germany
Source: Kotzab & Bjerre, 2005

IT applications used in the stores gives a picture of how the stores manage their operations as well as grasp the connectedness to other parts of chain. This would guide authors and readers to gain perspective as well as the flows of operations.

3 Methodology

In this section, the explanations of research strategy and research approaches used in this thesis are displayed. The methods is mentioned and reasoned as well as the strategies exploited in this research. The authors then give details in data collection. Lastly, this chapter ends with the quality of thesis and its limitations.

3.1 Research Strategy

The main interest of the study is to identify and describe how 7-Eleven manage and operate its retail convenience business focusing on several aspects; strategic fits, distribution and IT, which support 7-Eleven's activities. It leads to the exploration of the competitive advantage that originates from those perspectives.

There are various methodologies for research and methodology refer to the choices authors make about cases to study, method of data gathering, and from of data analysis etc (Sliverman ,2007). In this research the authors use a qualitative study as a methodology .The nature of qualitative research allows flexibility between gathering data and interpreting them within framed theories. Qualitative researchers usually work with small samples of people, nested in their context and studied in-depth, very different from quantitative researchers, who aim for larger numbers of cases and seek statistical significance (Miles & Huberman, 1994). It is also clarified by Zikmund (2000) that qualitative research is not to generalize the results but to gain a greater understanding of a studied phenomenon, concentrates more on finding the opinions, experiences and feelings of the individuals and producing subjective data, and it is concerned with questions about why, how, what why.

In this thesis, authors have constructed a research strategy which is customized to thesis purpose. Authors will use qualitative research method following with comparative research. A case study of 7-Eleven Thailand is chosen as a representative of an observation in logistics and retailing business in this research. The multi-data collection methods are employed from various sources of data to ensure the validity and reliability of the research. The sources of data include the chosen firm's representatives, 7-Eleven, including the staff in distribution center. Additionally, authors conduct the interview with other supply chain members such as 7-Eleven's supplier and company that provide transportation services to 7-Eleven. The interview with business analyst (financial analyst) is conducted to gain more market environment and trend of the industry. The authors also include both primary and secondary data throughout the data collection and analysis part. Subsequently, a description of the data analysis followed by the validity and reliability of this thesis are provided.

3.2 Qualitative Research

Qualitative research seeks out the 'why' and the 'how' of its topic through the analysis of unstructured information (Yin, 1994) – things like interview transcripts and recordings, emails, notes, feedback forms, photos and videos. The qualitative research does not only rely on statistics or numbers, which are the domain of quantitative researchers. Yin (1994) also depicts that the qualitative method is used to gain insight into attitudes, behavior, motivation

culture or lifestyles. Focus groups, in-depth interviews, content analysis and semiotics are among the many formal approaches that are used.

According to Silverman (2007), there is the most useful attempt to depict the different approaches within qualitative research. Gubrium and Holstein (1997) – cited in Silverman (2007) distinguish and criticize four different idioms. Please see the table below:

Four qualitative idioms

Idiom	Concept	Preferred methods
Naturalism	Actors, Meaning	Observation, Interviews
Ethonomethodology	Member' method for assembling phenomena	Audio/video recordings
Emotionalism	Subjectivity, Emotion	Interview, Life histories
Postmodernism	Representation, Pastiche	Anything goes

Source: Adapted from Gubrium and Holstein, 1997 –cited in Silverman (2007)

The purpose of this thesis casts the main interests on how logistics activities are handled and in what essence have them been regarded to. In this thesis, the authors will employ naturalism and ethonomethodology which the authors find to be the most suitable method out of the four idioms. The authors will correct information through observation and interviews by using tools such as phone, audio record, email and internet. Furthermore the authors will use interviews with several parties involved in the process of distribution in the selected case study.

3.3 *Case Study*

A case study is an extensive examination of a single instance of a phenomenon of interest. It involves gathering detailed information about the unit of analysis with a view to obtaining in-depth knowledge (Collis & Hussey, 2003). According to Yin (1994), characteristics of a case study research tend to explore a certain phenomena and offer the understandings in a particular context. The multiple methods can be used in the collection of data which encourage the authors to gain more opportunities in searching up the data to provide a sound analysis. Authors use a case study of 7-Eleven in Thailand as it poses as number one in chain convenience store in Thailand and ranked in top three in Asian market compared to all 7-Eleven franchises in Asia market.

3.4 *Collection of Data*

The authors use two main data collection. First, the primary data is from the interviews. The secondary data gives supporting data in to fulfil the gap from the interviews in this thesis. Both data collection methods are explained below.

3.4.1 Primary Data

The authors use interviews as a primary source of data.Why interview? This question may seem surprising, however the majority of published qualitative research articles use interviews and moreover compared to other methods, interviews are relatively economical in terms of time and resources (Sliverman, 2007). Saunders, Lewis and Thornhill (2007), present the definitions of three types of interview as;

Structured interview: Data collection technique in which an interviewer physically meets the respondent, reads them the same set of questions in a predetermined order, and records his or her response to each.
Semi-structured interview: Wide-ranging category of interview in which the interviewer commences with a set of interview themes but is prepared to vary the order in which questions are asked and to ask new questions in the context of the research situation.
Unstructured interview: Loosely structured and informally conducted interview that may commence with one or more themes to explore with participants but without a predetermined list of questions to work through.

The authors apply a semi-structured interview and an in-depth interview in retrieving primary data. The interviewees are involved 7-Eleven's personal, the financial analyst in commerce industry in Thailand, transportation firm, and supplier of 7-Eleven Thailand. Also, one interviewee is the ex-management level of the firm. He was interviewed by using unstructured interview. The questions to him are broad and seek for his experience and perception on many themes. However, some questions are the same in the context as the other interviewees, especially in 7-Eleven staff. (See appendix I)

The interviews with 7-Eleven's personal, transportation firm, and the supplier are intended to describing the functions at DCs and how each actors process these activities accordingly to others chain members. Questions regarding working environment and relationship are included. The financial analyst within the commerce sector provides the industry view and competition environment within Thailand. The interviews lasted between 40 minutes to one hour. Most of the interviews were conducted by telephone. There were some cases that authors use emails and internet communications. The summary of interviewees is given in the appendix.

Questions about the working process or the flows are raised. The interviewees also give the reflections about the way the process helps or hinders the performance. Details in the process are comprised further from secondary data. The authors have cross-checked data with the secondary data, which is explained later, to validate the information.

Most of the interviews were executed by telephone and internet. The authors aware of risks concerned with misinterpretation of the answers. The sessions are recorded to ensure the correction of the content to be analysed in later time. Due to the limitation of time, resources as well as the well-round data can flaw the research quality; the authors fulfil these slacks with secondary data described in a next section.

3.4.2 Secondary Data

The authors use "Desk research" approach on secondary data. Desk research is the term that is used loosely, and it generally refers to secondary data or that which can be collected without fieldwork. (Hague et al., 2004) Desk research use the existing information from the website, company data and sources, directories, magazine or other published sources (Yadin, 2002).

The authors gather data from company annual report, quarterly report and from its website. The data are trusted resources since the company selected in the case study is a listed company in Thailand which is obligated to provide financial and operations performance, and future plans to investors. The auditor's report is as well used to verify data.

The websites in retrieving data are the company website, the websites concern with analyst consensus, newspaper website, and business research data based in Thammasat University in Thailand.

Journals, magazines as well as the newspapers interviews with 7-Eleven are used as data in this thesis. They provide the authors with the reflections on firm's perspectives, especially in the interviews with management level of the firm. The data are compared and cross checked before included in the thesis.

According to Kent (2007), secondary data entails the proactive seeking of existing data in both qualitative and quantitative research. It can also help to interpret the primary data.

3.5 *Analysis Empirical Material*

Researcher can increase the quality of the analysis by dividing data into three phases: data deduction, data display and conclusion drawing, and verification from the presented material (Miles & Huberman, 1994). In this thesis, our data evaluation follows these three phases. According to Miles and Huberman (1994), the reduction of collected data in first phase, data has been noted and recorded, is shortened, simplified and compiled. The authors have recorded and written down all interviews from our respondents in order to prevent the loss of information. Moreover, they give the authors an opportunity to listen to the respondents again. All interviews are transcribed into written text after finishing of the interviews. The data reduction is made before the collection starts, questions are selected in the interview and they will be given to our participants only relating to the research purpose and objectives. Furthermore, in the second phase, the use of displays is not separate from analysis, formats can be as various as the imagination of the analyst, and different analytical activities can be used such as rows and columns of a matrix for qualitative data and deciding which data, in which form, should be entered in the cells. In our analysis part, related data are complied together to provide readers a complete picture of respondents' opinions. Lastly, in the final part of analysis section, the modified materials are analyzed then conclusion is drawn.

3.6 *Validity and reliability*

Validity addresses the problem of whether a measure measures what it is supposed to measure (Zimund, 2000). According to Thietart (2001), the main concerns with the validity are whether the measured data is relevant and precise, and the second is the extent to which we can generalize from those results. In this research, it brings up the question of whether the interview has measured in the right way and also all the interviewed questions has been proper and go well with the research's objective and purpose.

Reliability concerns the consistency and accuracy of the results obtained and it is achieved if research results can be repeated (Collis & Hussey, 2003). Reliability means dependability or consistency. Neuman (2006) suggests that the same result can be achieved under the identical or very similar conditions. This research uses many sources of data and all are cross-checked before included in the thesis. The interviews are made with several parties to gain insightful data. The interview data and data from secondary sources are compared to confirm the reliability of those data. To obtain higher reliability, the authors sent transcripts from the interviews to the interviewees to let them confirm their answer again. Therefore, this research is valid and is reliable.

4 Empirical Study

The forth chapter presents empirical study. The authors depict the issues relating to the subject studied which are the industry profile, the overviews of the business and its trend, the operation in many perspectives. The main objective of this chapter is to capture and present the case study as a whole.

4.1 *The development of Thailand's supply chain in retail industry*

This section overlays the retail industry development in Thailand as to give background and current situation in today's environment. The development consists of five stages as explained below (Department of Business Development - Ministry of Commerce, 2004).

Stage 1: 1944 – 1957- The Wholesaler age.
The flow of products is simple which mainly consisted of Producer/Supplier, Wholesaler and Retailer as members of the chain. The purchase order flows from the upstream to downstream in value chain along with loyalty to each counterpart. Due to the relaxed market environment and small number of channels of distribution, the chain member with the highest volume is likely to have the bargaining power and has an implication in chain direction. The bargaining power rests in hand of Wholesaler (Department of Business Development - Ministry of Commerce, 2004).
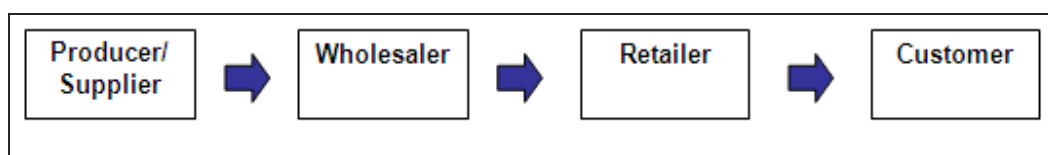
Figure 4.1: Stage 1: Wholesaler has the most bargaining power in supply chain
Adapted from Department of Business Development, 2004.

Stage 2: 1957 – 1975- The Producer age.
At this age, the introducing of Department store business has a big shift of bargaining power back to the Producer/Supplier as a result of a more distribution channel alternatives in department store form such as Central department store, Thai-Daimaru department store. Moreover, these department stores normally run supermarket which directly competed with the Retailer. However, the number of department store was far less than the Retailer, plus the prices were indifferent which made the attractiveness to customer behavior quite stable (Department of Business Development - Ministry of Commerce, 2004).
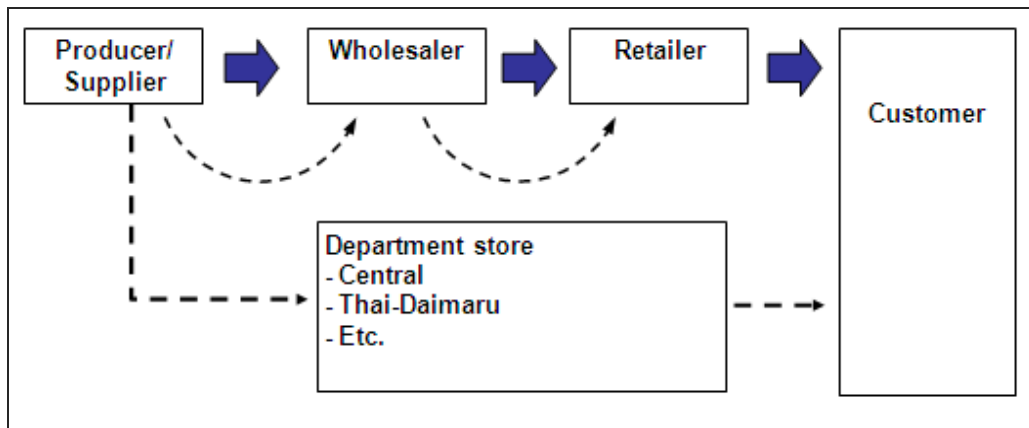
Figure 4.2: Stage 2:Producer/Supplier have the most bargaining power.
Adapted from Department of Business Development, 2004.

Stage 3: 1975 – 1994 – The Modern Trade age.

The development of the Modern Trade has urged a new chain formatting. The chain with modern trade did not interfere within the former chain; however, it has introduced a new chain format, and consequently put two chains in parallel competition. The former chain is called traditional trade and the latter is modern trade. Due to the intensive volume, modern trades attain bargaining power resulting in cost reduction on price of purchase. As seen in the figure below, the modern trade has fewer chain members as it has direct contact with the supplier. This means more margins at the end of the chain compared to the traditional trade. According to the kept profits at each chain joint, the more chain members means the less profit at the end of the chain. Moreover, modern trade focuses on customer service, market research and efficient operation which promote its competitive advantages and wipe out the traditional retailer who is less cost efficient (C. Tuangrattanaphan; ex-management level in 7-Eleven, personal communication, 2009-05-05). Some examples of modern trade retailers are such as Makro, Big-C, Tesco Lotus, Carrefour and 7-Eleven (Department of Business Development - Ministry of Commerce, 2004).

Figure 4.3: Stage 3: Bargaining power shifted to Modern retailers.
Adapted from Department of Business Development, 2004.

Stage 4: 1994 – 2003 - The International Modern Trade age.

Lacking cost competitiveness in traditional retailer force them to seek products with lower prices in order to survive in the market. Lacking of competency to compete directly with the modern retailer, the traditional retailer return to the wholesaler and at times search for

27

cheaper product at the modern retailer (Department of Business Development - Ministry of Commerce, 2004).

According to the interview with Mr. Chatrchai Tuangrattanaphan (ex-management level in 7-Eleven), some international retailers continue to enter Thai market. (C. Tuangrattanaphan, personal communication, 2009-05-05) This phrase has driven the wholesaler to compete more intensely with the modern trade.
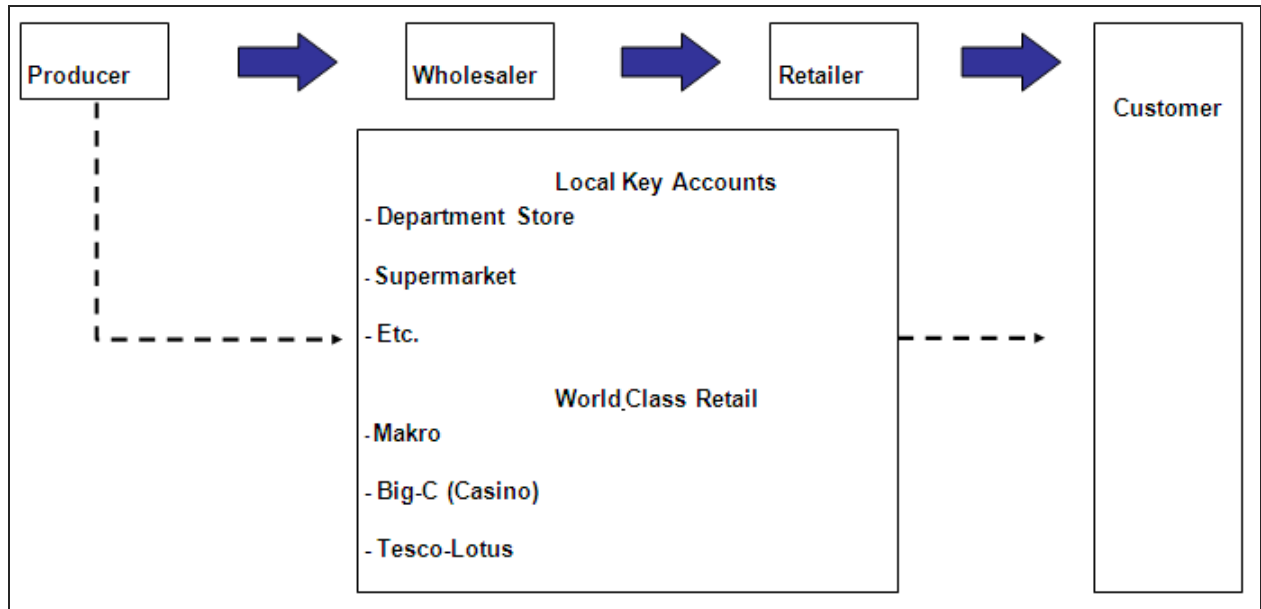
Figure 4.4: Stage 4: Bargaining power rests in International retailer.
Adapted from Department of Business Development, 2004.

Stage 5: 2004 – Present – International Retailer influences the market
The international retailer or world class retail has won over the market as explained in the fourth stage. The customer and the traditional retailer have gradually changed the shopping place to world class retail as it offers more quality and service at lower price. The shift in customer behavior in downstream value chain is driving the underperformed wholesaler out of the business (Department of Business Development - Ministry of Commerce, 2004).

"The need to improve operation in economic way is increasing importance" (C. Tuangrattanaphan (ex-management level in 7-Eleven), personal communication, 2009-05-05).
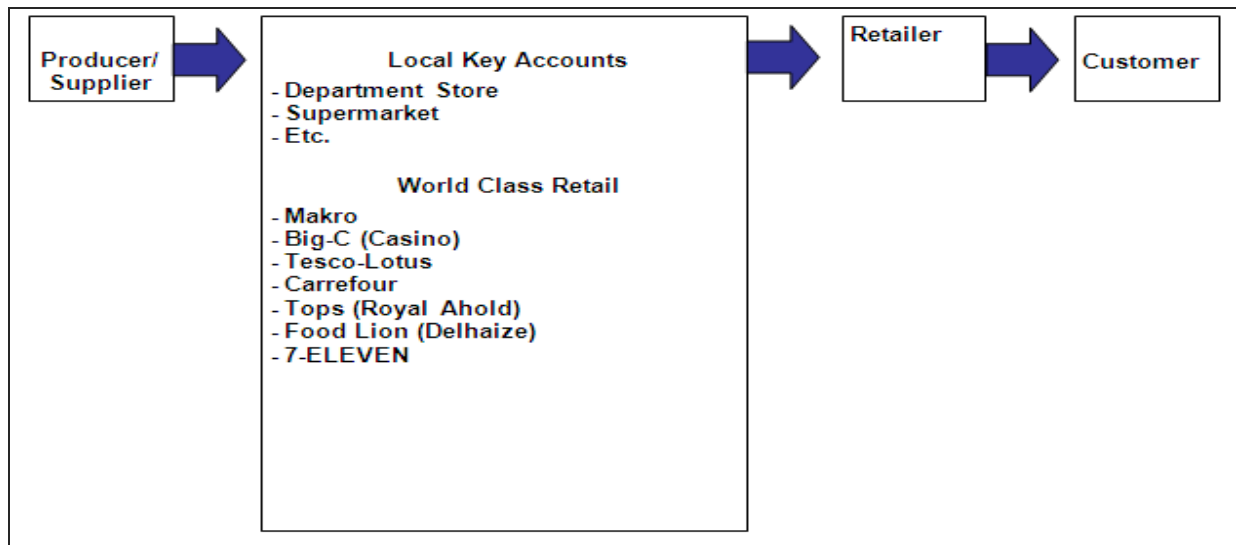
Figure 4.5: The present stage, world class has higher bargaining power.
Adapted from Department of Business Development, 2004.

4.2 *The 7-Eleven (Thailand) Profile*

The retailers are continuing on expansion in Thai consumer market. By opening new outlets, renovation and modernizing the existed stores to improve customer experience made the retail industry the important player in a consumer market. (Price Water House Cooper, 2005) The 7-Eleven Thailand is the biggest chain format convenience store serving more than 5.5 million people per day nation-wide. It has outnumbered its chain convenience store peers with 4,778 stores and the sales volume of Baht 98,108 million in 2008.

CP All Plc., the operator

7-Eleven was introduced to Thai society in November 1988 under the operation of C.P. Seven Eleven Plc. Later on, the company has changed its name to CP All Plc in 2007. The Company was established in 1988 by the Charoen Pokphand Group to operate the convenience store business in Thailand under the "7-Eleven" trademark. (CP ALL Plc, 2009) With area license agreement with 7-Eleven, Inc., where is incorporated in the United States of America, CP All has acquired a license to use the systems and trademarks of 7-Eleven, Inc. in connection with the operations of 7-Eleven convenience stores or franchising of such operations to other retailers in Thailand. The company is using the same certain services related to training and technical support. It is committed to pay royalties to 7-Eleven, Inc. calculated as percentages of total sales of the stores in Thailand. (CP ALL Plc, 2009 and KPMG, 2009)

CP All Public Company Limited is the operator of 7-Eleven convenience stores in Thailand for 2 decades. The store network covers areas across the country with a wide array of products and services. It serves the demands of average 5.5 million customers per day. In 2008, 7-Eleven continued to expand with 499 new stores and had a total of 4,778 stores as of 31 December 2008. The company continues to grow with total revenue of separate financial statement in 2008 of Baht 98,108 million or SEK 21,732 million[1], rising 19.9 percent. The

---

[1] Exchange rate as of December 30, 2008, THB 4.5145/ SEK. Source: Bank of Thailand.

expansion of store numbers makes Thailand the country with the fourth largest 7-Eleven network in the world after Japan, the USA and Taiwan. Of the total 2,433 stores are in Bangkok and vicinity (51 percent) and 2,345 stores are in provincial areas (49 percent).

In 2009, the Company plans to establish other 400-450 new outlets both as stand-alone stores and stores located in PTT gas stations to reach more target customers both in Bangkok, the vicinity and provincial areas. At the end of 2008, the Company had 4,065 stand-alone stores (85 percent) and 713 stores in Petroleum Thai gas stations (PTT gas station) (15 percent).

OPERATIONAL HIGHLIGHTS, yearly consolidated data.

	2005	2006	2007	2008
Number of stores				
Corporate stores	1,931	2,119	2,462	2,671
Franchise stores	1,191	1,449	1,562	1,813
Sub area stores	189	216	255	294
Total stores	**3,311**	**3,784**	**4,279**	**4,778**
New stores opened	450	473	495	499
No. of store (PTT/Non-PTT)				
Non PTT (stand-alone store)	2,915	3,279	3,665	4,065
PTT(stores operate in gas station)	396	505	614	713
No. of store (By geography)				
Bangkok (incl. Sub-urban) stores	1,748	1,960	2,210	2,433
Provincial stores	1,563	1,824	2,069	2,345
Avg Customer/store/day	1,032	1,156	1,155	1,195
Avg Sales per ticket (Baht)	58	56	57	57
Product sales mix (%)				
Non-Foods	51.6	53.2	50.9	48.4
Foods	48.4	46.8	49.1	51.6
Gross margin mix (%)				
Non-Foods	13.0	12.5	12.7	13.5
Foods	26.6	27.0	27.3	28.2
Avg Daily Store Sales / store (Baht)	59,679	64,564	65,143	68,709

Figure 4.6: Operational Highlights of 7-Eleven Thailand as of 2008.
**Source: CP All, 2009. (http://www.cpall.co.th/corp/investorZone_operational_info.php*)*

According to type of store, there are 2,671 corporate stores (56 percent), 1,813 franchise stores (38 percent) and 294 sub-area license stores (6 percent). The company targets the ratio of franchise stores will increase to 50 percent of the total store number. (CP ALL Plc, 2009)

The type of stores is illustrated in figure 4.7 along with the number of the stores by year in figure 4.8.
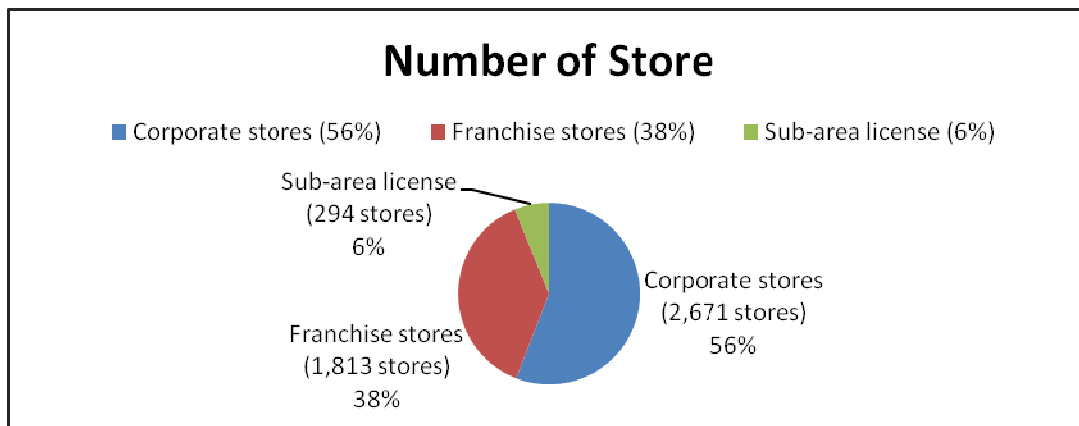
Figure 4.7: The number of 7-Eleven stores in Thailand by type of ownership (2008).
(Adapted from CP ALL Plc, 2009)
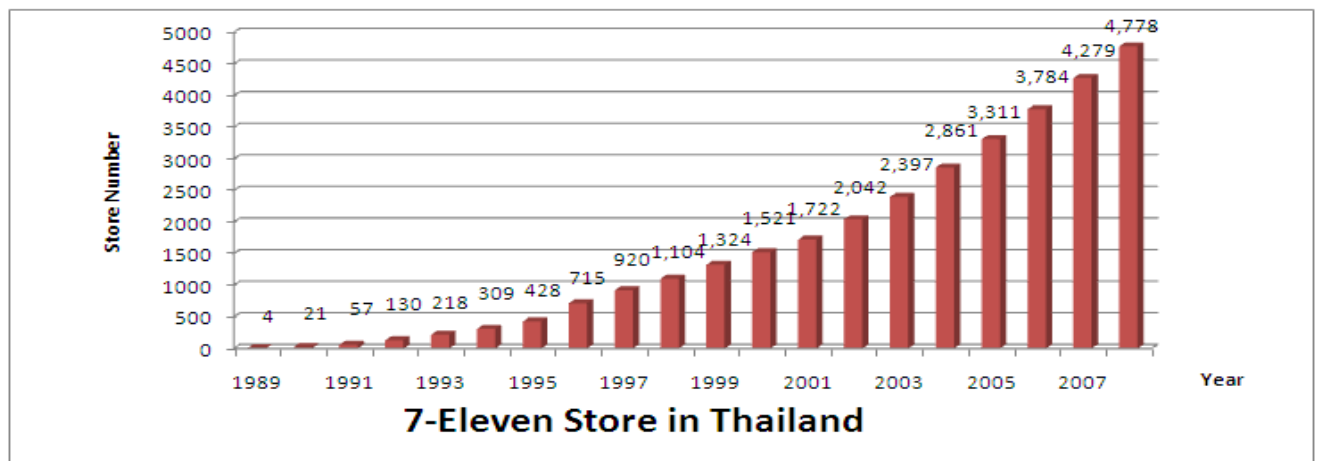
Figure 4.8: 7-Eleven store number by year.
Source: CP ALL Plc, 2009
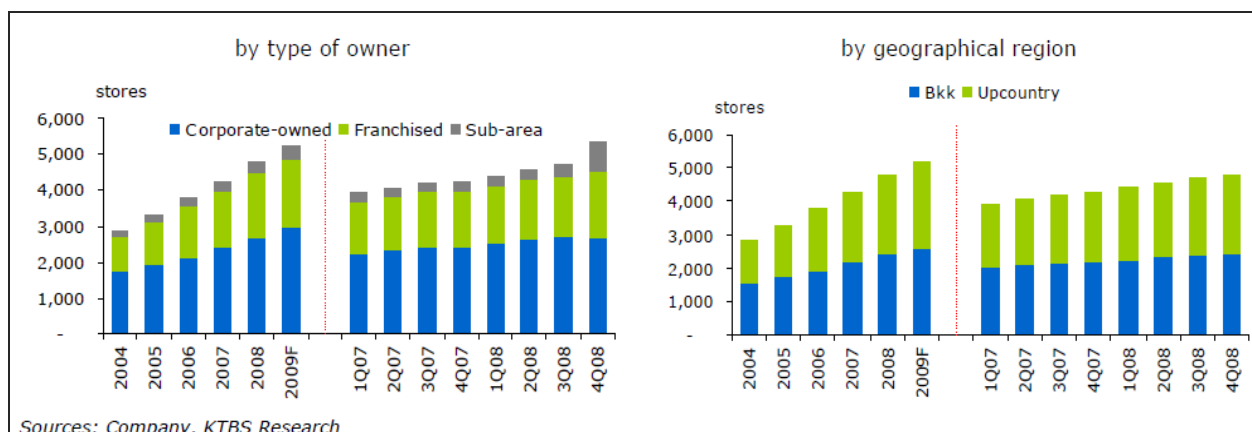
Figure 4.9: 7-Eleven store breakdown by type of owners and geographical region.
Source: Seamico Securities Plc , 2009a.

4.3 *Business Preview*

The fierce competition is spreading around retailing industry. However, it was found that retail business in the form of convenience stores have been able to expand and has become an interesting segment for investment by both current retailers and retailers from other segments. Convenience store expansion has been accomplished through both corporate stores and franchise stores. In 2008, there was an increase of 703 convenience stores under the chain store format. Out of the total, 499 stores were 7-Eleven stores.

The number of convenience store outlet in chain format by location

	2005	2006	2007	2008
Total convenience store	6972	7738	8523	9249
Stand alone convenience store	5344	5997	6681	7288
Convenience stores in gas station	1628	1741	1842	1961
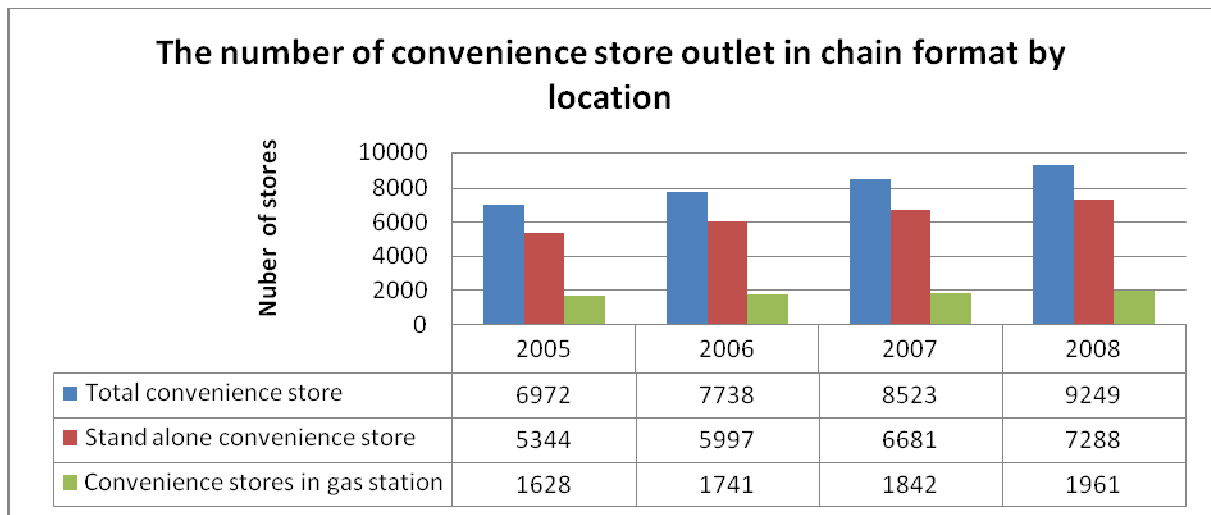
Figure 4.10: The number of convenience stores in chain format in Thailand by location.
Adapted from CP ALL Plc, 2009

The number of convenience store outlet in chain format by operator

	2005	2006	2007	2008
Total convenience stores	6972	7738	8523	9249
7-Eleven	3311	3784	4279	4778
Others	3661	3954	4244	4471
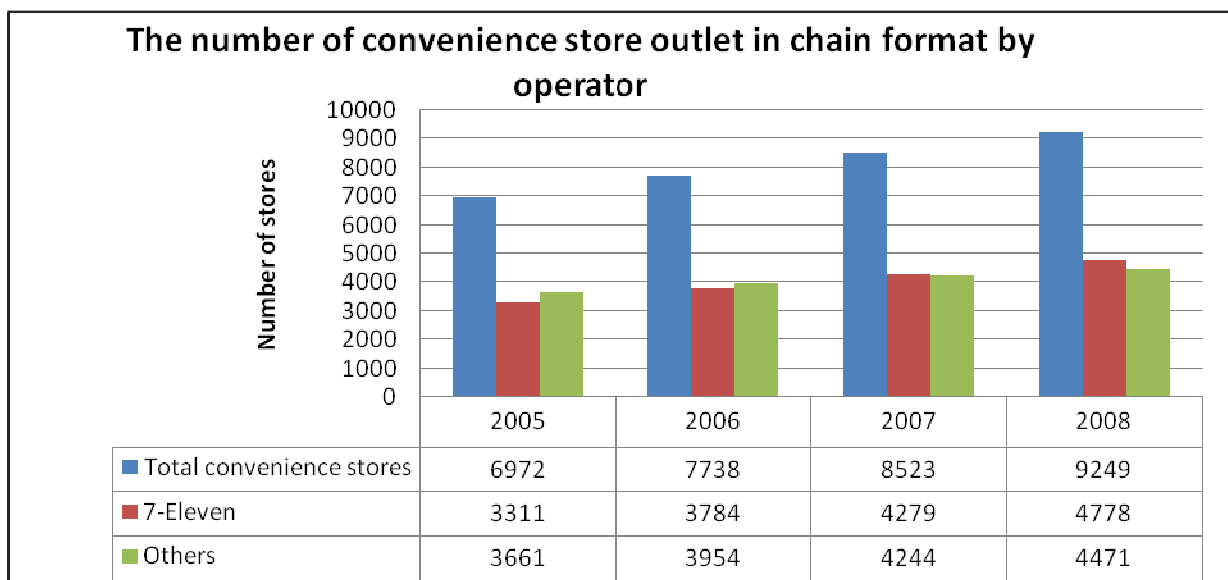
Figure 4.11: The number of convenience stores in chain format in Thailand by the operators.
Adapted from CP ALL Plc, 2009

Despite intense competition in the expansion of small-scale retail stores, there is still opportunity for continued outlet expansion in communities to serve consumers who increasingly demand convenience and speed (N. Sodchuenjit; Financial Analyst, personal communication, 2009-04-27).

The next figure shows the market share of 7-Eleven and its peers in chain convenience store industry in Thailand, which 7-Eleven is a leader.
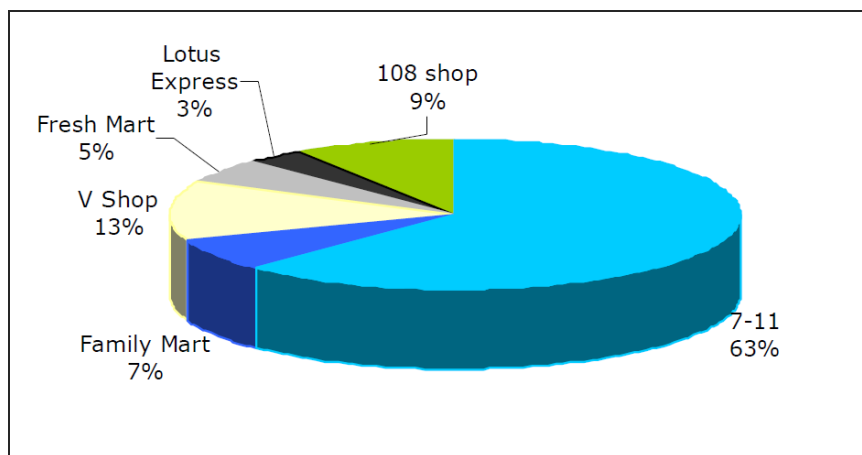
Figure 4.12: The market share in chain convenience store industry in Thailand (2008).
Source: Seamico Securities Plc, 2009a.

By the total sales and the number of the stores, some arguments have been put to reason the success of the company in these numbers that the growth might have resulted from the expansion rather than the existed stores success. The arguments imply that the existing stores should not be overlooked as the total sales in overall increasing might be accounted from only the expansion. The doubt can be cast away from the figure below which confirms the same store growth rate at 3 percent in 2008.
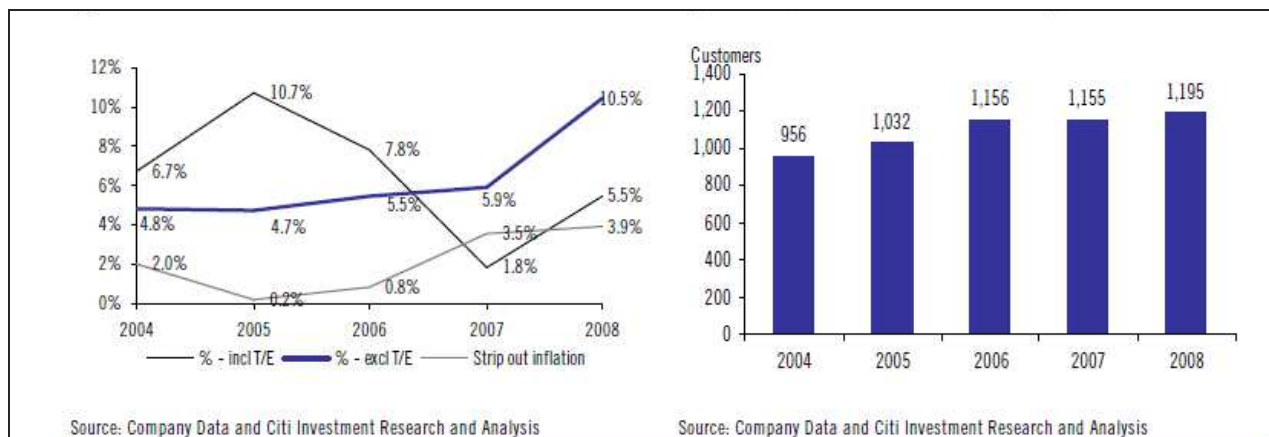
Figure 4.13: The Same Store Sales Growth and Number of Customer Per store Per Day
Source: Citi Investment Research and Analysis, 2009

Despite the above explanations and figures about the number of store and their location (Bangkok VS Upcountry), saying only the company is growing, have not any suggestions on point of the market maturity. (Citi Investment Research and Analysis, 2009; Seamico Securities Plc, 2009a, and UBS, 2009) Comparing the population served at the store in many countries it can be interpreted that the Thai market situation is now (2009) far from the saturation point. The company has the growth opportunity and has a long way to go (N. Sodchuenjit, personal communication, 2009-04-27)
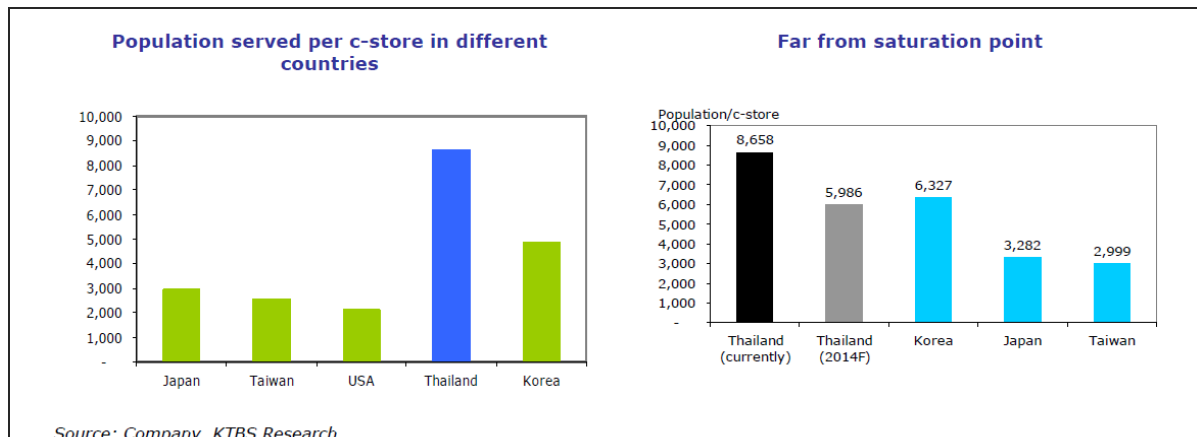
Figure 4.14*: **The number of the population served per convenience store in different countries.**
Source: Seamico Securities Plc, 2009b.

In the convenience store currently serves approximately 8,600 people per year in Thailand, 2,900 in Japan, 2,500 in Taiwan, 2,100 in the USA, and 4,800 in Korea. The recent number is far from the levels achieved in the mature markets (e.g., Japan and Taiwan). (Seamico Securities Plc, 2009b)

Thailand's large population and under-penetrated retail market provides consumer companies with room to grow passing through capacity expansion. Comparing supply per capita with the Asian average, retail space, the number of convenience stores are 54 percent, 52 percent below average, respectively (UBS, 2009).The large upcountry population (84percent of the population) generating 60 percent of Thailand's national income (National Statistical of Thailand, 2007, and UBS, 2009).
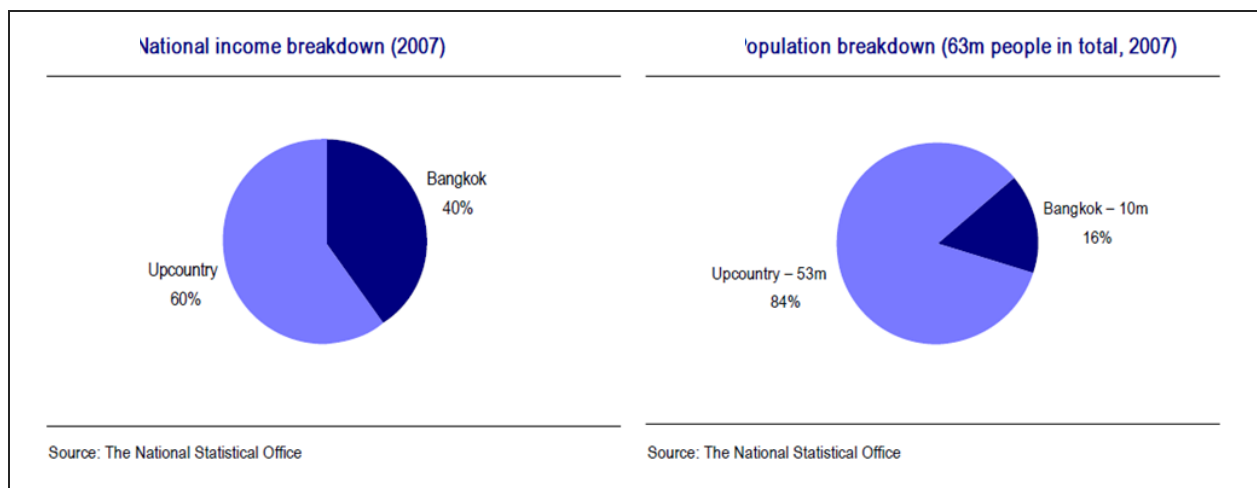
Figure 4.15*: **National income breakdown and Population breakdown in 2007.**
Source: UBS , 2009
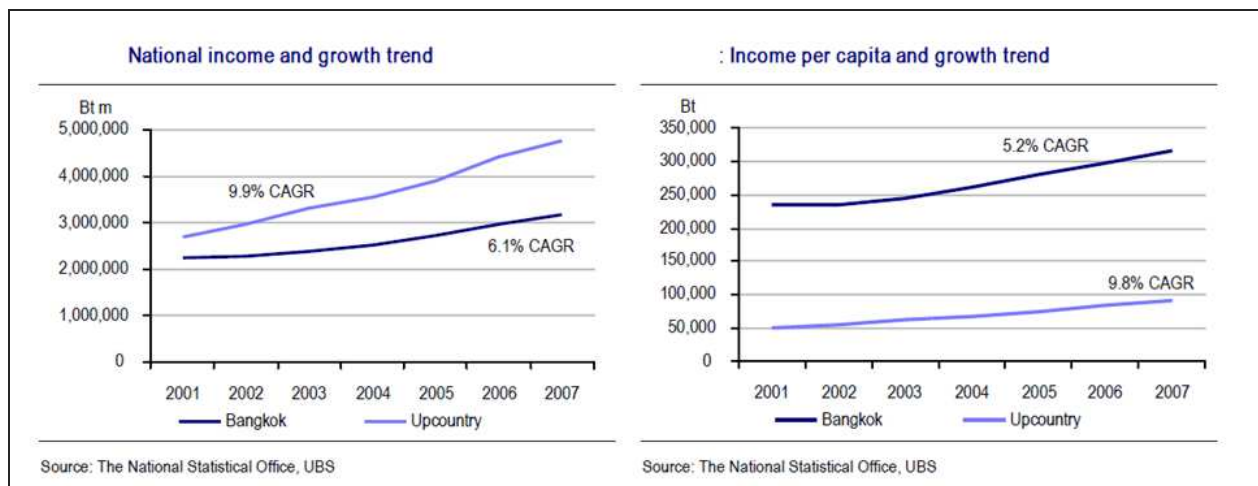
Figure 4.16: *National income growth trend, and Income per capita and growth trend (Thailand, 2007)*
Source: UBS, 2009

The national income per capita may seem low but it is growing in an accelerate rate (9.8 percent at compound annual growth rate in the past 6 years) Moreover, the low penetration rate of the retail industry in upcountry gives an opportunity for the industry to expand the market in the provincial areas as suggested by the figures of upcountry population per store at 460 percent higher than in Bangkok and 59 percent higher at income per store rate in contrast with 52 percent of retail stores located in Bangkok. (UBS, 2009) To sum up, the company may have a good chance of growth by locating its store in the upcountry area. Also the company benefits from defensive nature of the business in retail convenience means, despite the economy condition, the company can easily grow through the expansion to the underserved areas (N. Sodchuenjit, personal communication, 2009-04-27).

4.4 *Product Assortment*

According to the strategy of the firm which calls itself as 'Food Retailer', products of the company are categorized into two major groups: Foods & Beverage and non-food products including phone card. In 2008, the food and beverage accounted for 52 percent of the products and 48 percent for the non-food product category (CP ALL Plc, 2009). The company focuses on ready-to-eat food and drinks to cater to the lifestyle of the Thai people that have less time and are always in a rush. The strength of "convenience" to customers in purchasing goods and services and move towards the store expansion across the country and most of which open 24 hours a day. Convenience Food Store through 7-Eleven outlets is also boosting the convenience motto. 7-Eleven places great importance on the location of every 7-Eleven store. Greater emphasis is given to selling food and beverages than selling consumer non-food products as food and beverages have higher margins.

The number of products and service in 7-Eleven is 2,500 to 3,000 SKUs. They are divided into three categories. (CP ALL Plc, 2009)

Food and Beverage – accounted for 52 percent of total products in the store and give relatively high margin. There are three sub-categories;
- Beverage: Drinks
- Process Food: Food product the needs to process before consume such as instant noodles, snacks, seasoning sauce and ingredient.

35

- Food Service: Exclusive food products which only sold at 7-Eleven. The samples are ready-to-eat food; sausages, Dim-sum, rice cake; frozen food, and chilled food.

Non-Food – accounted for 48percent of total products. It includes consumer products such as soap, shampoo and also phone card and other cash refill cards.

Service – 7-Eleven adopts the pay point services for example utilities bills, credit card payment, ticket payment, plane ticket at Counter Service. The store services the 7-Catalog order point for customer.

Due to the large market areas, company divided Store Cluster according to location such as residential areas, marketplaces, schools, office, gas stations, factories, tourist spots, and transport transfer areas in order to plan product and formulate service management strategies to best meet the needs of customers (Puapairoj, et al., 2009). 7-Eleven has short life product cycle. It reshelves once or twice every week by the anaysis team (N. Sodchuenjit, personal communication, 2009-04-27). The frequent reshelve increases the freshness and quality of products for each store.

4.5 *Source of Supply*

There are two main sources of supply in 7-Eleven supply chain. First one is suppliers and another is the company itself. (CP ALL Plc, 2009, and Puapairoj, et al., 2009)

4.5.1 Supplier

The 93percent of total products in 7-Eleven store are supplied from 1,200 – 1,500 suppliers. Each has the share for less than 20 percent of the total sales of which according to the risk management scheme, not to depend on any particular supplier more than necessary. The left 7 percent are supplied from 7-Eleven groups and the CP Group – the major share holder of CP All.

4.5.2 In-house Manufacturer

The company has the in-house manufacturer products, within other holding companies in CP Group, supplied daily products such as chilled food, bakery and other exclusive food.

4.6 *The Operation*

Running a success chain convenience store can be achieved to the combination of every function of the firm, the performance of the channel of distributions or the stores, franchises, the quality of product and service and the suppliers. Put in another word, the whole supply chain must cooperate and add value to the end customers. However, some broad views should be mentioned including the location of the store, the distribution system, the information system (IS), and network of 7-Eleven.

Managing the store to meet 7-Eleven's standard by applying the system to the stores. Standard also eased the expansion in both the number of stores and sales (Journal of Logistics

Thailand, 2005). The system draws on data that is beneficial for the decisions in management and strategy and will result in the effectiveness and efficiency of the firm.

The store location is the gate to capture the customer and incite them in to the store to enhance sale opportunity. The company chooses the location at an 'A' location which means a great location with high density of the passersby. (CP ALL Plc, 2009) Good location characterizes as convenient. (N. Sodchuenjit, personal communication, 2009-04-27, and A. Soisuwan, personal communication, 2009-04-29). It also raises the firm's recognition of the trademark 7-Eleven.

Sales and marketing plan acquires fruitful information regarding sales and market situation, customer behavior from POS to improve and help formulate sales and market strategies (C. Tuangrattanaphan, personal communication, 2009-05-05). Knowing demand situation provides greater chance to meet the needs of customers.

The next worth mentioning is the distribution system. The company has several distribution centers serving several store area to deliver fresh and quality products with less lead time and helps to reduce inventory and logistics costs to the whole chain (Logistics Thailand, 2005). In the value-added product and service is delivered to the customers, creating competitive advantages in a sustainable manner. DC also deals with the procurement function for the stores. The consolidation and combination of the product from each category are allocated to the stores as ordered from here (C. Tuangrattanaphan, personal communication, 2009-05-05). The DCs contain the system that shorten order cycle time, granting the fresh and superior product and service quality to the customers.

By using warehouse management system, 7-Eleven can monitor the inventory level in the store and manage overall operation in the store as well as collecting data from the POS to generate the precise analysis to facilitate the decision making (Logistics Thailand, 2005). This improves the inbound logistics function. The inventory handling together with storing procedure allow fill rate turnover at 3 times per day. The frequent fill rate reduces the risk of lost sales due to the availability of merchandise (C. Tantipaswasin, personal communication, 2009-04-29)

For outbound logistics, 7-Eleven are very responsive. With technology from the store to head office and the DC 7-Eleven is able carry out swift preparation of outbound logistics from both DC and suppliers to the stores. (Logistics Thailand, 2005). The process of outbound logistics in details is discussed in the distribution part of the thesis.

The Information System (IS) facilitates the management in many dimensions and operations of the company, for example, the market analysis, the purchasing system, store system, system in DC and other departments. (Logistics Thailand, 2005) The IS facilitates the seamless operations in different functions of the firm. This may have the positive effects on the operations of the other members of the chain including downstream and upstream. The ISDN and POS connect the data letting online information through the network facilitate the efficient business. Moreover, it enhances the chain capabilities in feeding back the customers' information back to the upstream members.

The store expansion extends the 7-Eleven networks, gaining more opportunities from the market and benefits from the scope and scales. (N. Sodchuenjit, personal communication, 2009-04-27). As cited in the company interview (Logistics Thailand, 2005) the introduction of the new product and service is more likely to be successful through the networks.

Rather than these functions, others units in the company also have their roles that support the organization. The business model below gives a rough picture of how 7-Eleven links the thinking, process and create the outcomes.

Please see figure 4.17 the illustration of 7-Eleven business model.

7-Eleven Thailand Business Model

Input	Value-added Process	Output
Market strategy	- Target market - Positioning - Market mix	- Convenience and fast service - Many locations - 24 hours service - Product availability at any type
Manufacturing and Operation Strategy	- Franchise operation - Out sourcing operation - Creating hiuse brand - Product Distribution - IS management	- Horizontal expansion - Cost reduction - IS for managerial applications
R&D Strategy	- Product & service Development - Manufacturing Development - Innovation	- Differentiation - Cost leadership - Innovative product
Financial Strategy	- SBU finance - Increase ROE	Higher Profits Margins
Product Category Strategy	- Product Categorize - Positioning of each category - Performance measurement - Strategy of each category , method and planning - Evaluation of each category	- Products match customers' needs - Increasing store traffics - Increasing Sales - Better utilized store space
Human Resources Strategy	Creating a "See-Feel-Change" working environment	Right personnel with efficient and adaptive ability

Figure 4.17: 7-Eleven Thailand Business Model.
Source: Journal of Logistics Thailand, 2005

4.7 *Order Fulfillment*

To get the overall picture of where the ongoing process in the chain starts, the authors depict the order fulfillment process. Start with the order fulfillment of the 7-Eleven stores, the purchasing orders flow to the company which in turn rechecks the availability of the merchandise to see if the order has to be made to the suppliers. This ongoing process has an effect on many functions and parties both internal and external.

4.7.1 Order fulfilment process from stores to DCs

Each store requires the merchandise to be sold daily with the alternating purchase orders in product types and volume. These orders are collected at every store and are consolidated at the 7-Eleven data center in order to synchronize the operations in many functions such as product distribution, purchasing, accounting and analysis of the data. The illustration in figure 4.18 shows this flow.
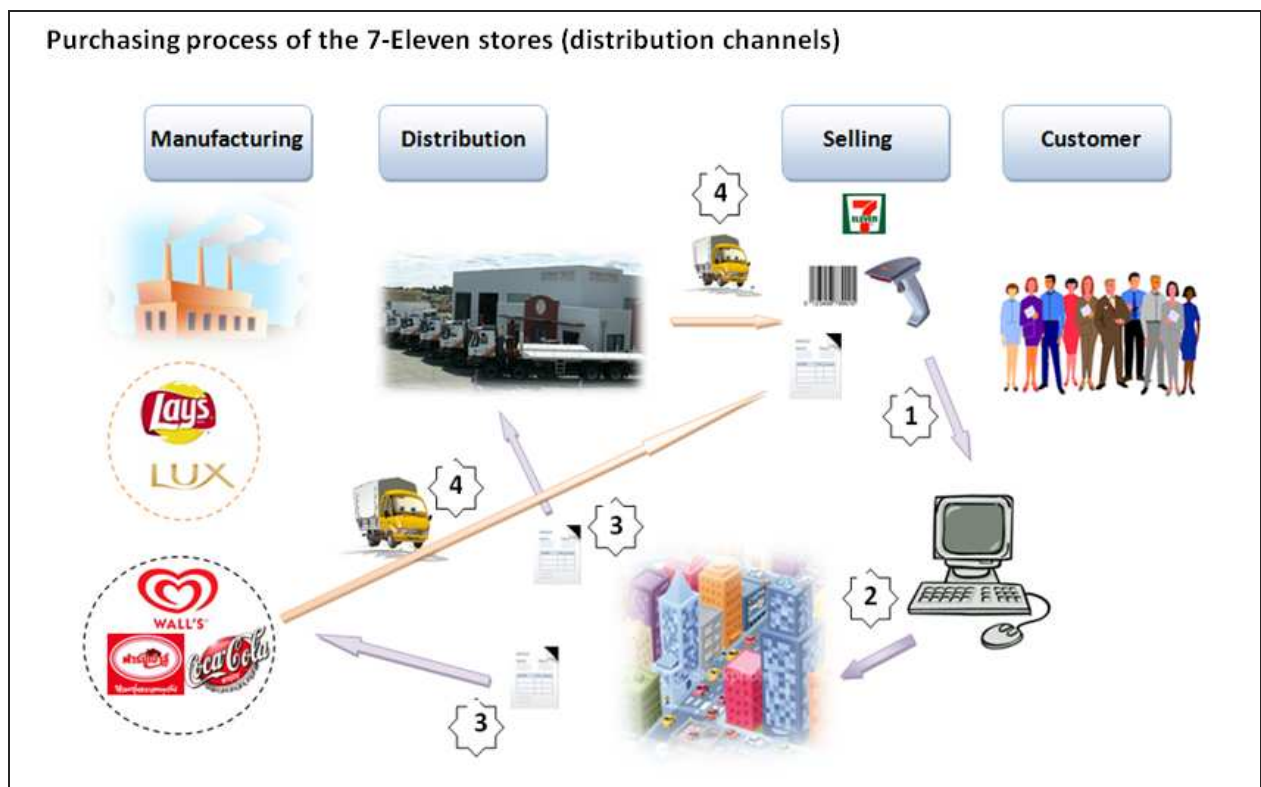
Figure 4.18: Purchasing process of the 7-Eleven store to the DCs.
Adapted from Puapairoj, et al., 2009.

1. The staff at the store uses the Electronics Order Booking (EOB) to make a purchase on items required in the store
2. Data from EOB is transferred to the Store Computer (SC) which consequently sends the information to the head office before 3.00 am. The orders placed after 3.00 am will be registered in the following day.

3. The head office processes the data from each store, consolidates the data then sends them to the responsible DCs or suppliers in each area. The data is send between 4.00 and 5.00 am.
4. The DC analyses the purchase orders from the head office and groups up the store locations to route the shipment. After the order processing process, the preparations of the products to be transported are done according to the Picking Slip of each store. The preparations take less than 3 hours. However, in case the orders are sent directly to the supplier, the supplier will ship the products to DC in a following day or send the product directly to the store.
5. When the purchase orders arrive at the store, the staff at the store checks the products and receives the merchandise. In case of mismatched order or the under-standard item, the store will deny the item and return to DC or supplier right away.

The order fulfillment process of the distribution channel in this case, 7-Eleven store, has a cycle within less than a day if we see it in the dry grocery products. However, the process takes longer time in food or daily products since these products needs freshness of which cannot endure the longer storage time in CDC. Resulted from this, the head office will place order directly to the suppliers to produce the products and transport them to the DC in the next day (Puapairoj, 2009). Subsequently, food, daily products or products or short-life products would take two days to reach the stores after placing the purchasing orders.

4.7.2 Order fulfillment process from DC to supplier

The order fulfillment process in term of 7-Eleven DCs order the products from its suppliers can be explained by steps thereafter. (Puapairoj, et al., 2009)
1. The inventory position in DCs is held indicating which of the products have to re-order. The purchase orders will be sent from DCs to the head office where the orders are checked by the purchasing department at head office.
2. Purchasing department verifies the orders and send the purchasing orders to each supplier.
3. The suppliers receive the purchasing orders and produce the products to supply the DCs.

The following illustration depicts the process of order fulfillment of 7-Eleven's DC.
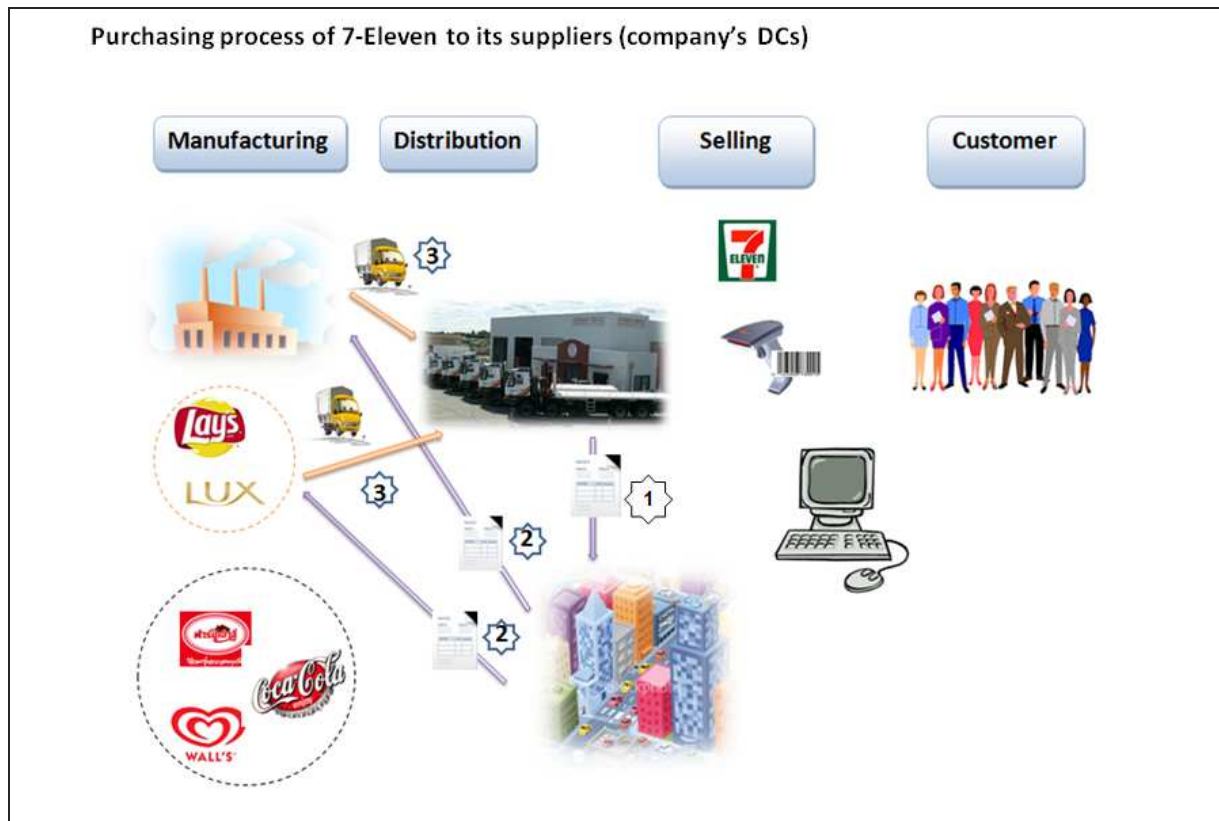
Figure 4.19: Purchasing process of 7-Eleven's DC to its suppliers.
Adapted from Puapairoj, et al., 2009

The process of receiving goods is monitored by DC planning function and purchasing department. The team coordinates to calculate the quantity products and schedule shipment from suppliers to DC. The processes are managed through Electronic Data Interchange (EDI). The Vendor Management Inventory (VMI) system is applied to big suppliers, whereas email and fax are used with smaller suppliers (Matichon Newspaper, 2007). In some cases 7-Eleven has set up a team with supplier to work on the logistics planning as well as other agreements. (A. Soisuwan, personal communication, 2009-04-24).

4.8 *Information Technology*

Today the company uses the technology on the basis of simplicity, compact at acceptable cost and capable with the growth. (Journal of Logistics Thailand, 2005) The online data has increased the accuracy, convenience and quality of products and service of 7-Eleven. (C. Tantipaswasin, personal communication, 2009-04-29).

4.8.1 System at the store

Each store has tools provided by 7-Eleven company. The Electronic Order booking System or EOB is the system used in the store and is the main system. The POS, Store Computer and EOB device are the general store information system in 7-Eleven stores. (Dai, 2004) The details are described below.

- **Point of Sales system (POS):** POS allows the collection and storage of data when the products are sold. When a customer purchased an item and paid at the POS register, the item information was retrieved from the store computer and the time of sale was automatically recorded. In addition, the cashier recorded the age and sex of the customer. These data will be interpreted in particular ways which can be evaluated on a companywide, district, and store basis and used in the analysis and planning. The POS register has barcode scanner which retrieves the data and interpret them. This POS data is automatically transmitted online to a host computer. The analyzed and updated data is then sent back to the store via the ISDN network. Each store computer automatically updates its product master file to analyze its recent sales and stock movements. The main objective of the analysis was to improve the ordering process. (Dai, 2004; Journal of Logistics Thailand, 2005, and Puapairoj, et al., 2009) The information analyses of POS data are as below. (Journal of Logistics Thailand, 2005, and Puapairoj, et al., 2009)

  o Sales analysis of product categories over time
  o SKU analysis over time
  o Analysis of waste or disposal
  o Ten-week sales trends by SKU
  o Ten-day sales trends by SKU
  o Sales analysis by day and time
  o List of slow-moving items
  o Analysis of sales and number of customers over time
  o Daily product analysis overtime
  o Reconcile data
  o Publication analysis

In 2009, 7-Eleven store in Thailand has 2-3 POS registers depends on the size of the store. In addition, POS system is developed from IS department by using Visual Basic and Data base on SQL Server. (Puapairoj, et al., 2009)

- **Store Controller (SC):** SC is linked to the ISDN network, the POS register, the graphic order terminal, and the scanner terminal. It communicates between the various input sources, tracks store inventory and sales, places orders, provides detailed analysis of POS data, and maintain and regulate store equipment. In other words, SC acts as a system monitoring and processing the internal store data and bridges to the external network or the head office. The SC's functions include;

  o Purchasing
  o Receiving merchandise
  o Transferring merchandise
  o Returning merchandise
  o Updating merchandise data in the store
  o Generating reports
  o Collecting and consolidating data and send the data to the head office

The SC system has been developed by internal and external function from India by using Visual Basic and Microsoft SQL Server as data base. (Puapairoj, et al., 2009)

- **Electronic Order Booking (EOB):** The EOB portable device represents the same data as an order book. It applies the barcode scanning to collect data while person placing an

order can look at the portable screen and order while walking along the aisles. The purchasing process begins with the staff downloads data from SC then he or she performs the inventory checking on the item in interest by scanning the product's barcode. After scanning barcode, the EOB screen will show the inventory position of the product on shelf and in store's inventory. Then the staff can decide to purchase more items by keying in the purchase order to the device. (Puapairoj, et al., 2009, and Journal of Logistics Thailand, 2005) Once all the orders are placed, the device is kept in its slot where the orders are relayed by the SC to both the appropriate vendors and the DCs through the head office.

4.8.2 System at Distribution Center and Warehouse

The system in the distribution center and warehouse focuses on managing the orders from 7-Eleven stores and relating transportation activities which requires DC to match the demand with internal utilization and capacity. This system is called "Warehouse Management System" or WMS. WMS consists of many sub-systems such as Exceed 2000 which was developed from Informix and it works on UNIX system. WMS helps to manage transportation as well as bridge the information system on the AS/400 and Exceed 2000. (Puapairoj, et al., 2009)

Other than the transportation management, the company has a system built to expedite the product sorting, keeping and preparation process on a more precise manner by employing an IT tools called "Digital Picking" to improve the overall performance in the DC. After the DC has analyzed the purchasing orders from the head office, the next is to prepare the products purchased for the stores by putting these products into the box which called "Break Case."

Figure 4.20: Warehouse Management System (WMS)
Source: Puapairoj, et al., 2009

Each of the case have the Barcode attached to it indicating which store it belongs to and which items are to be placed into this case. After scanning the barcode, the system sign will change to "PICK" along with the light signals along the storage aisle where those items are kept. The signals at the storage where the products indicate the location of the items as well as the quantity purchased according to that specific 7-Eleven store. Next, the staff picks the item as told by the light signs and turn off the light signal once he or she finishes picking the items at each station. This process continues until the orders are all put in the case. Automatically, the signal will change to "END" to signal the staff to close the case and begin

with the new case. This goes on until all the purchase orders from every store (every case) are through (Puapairoj, et al., 2009).
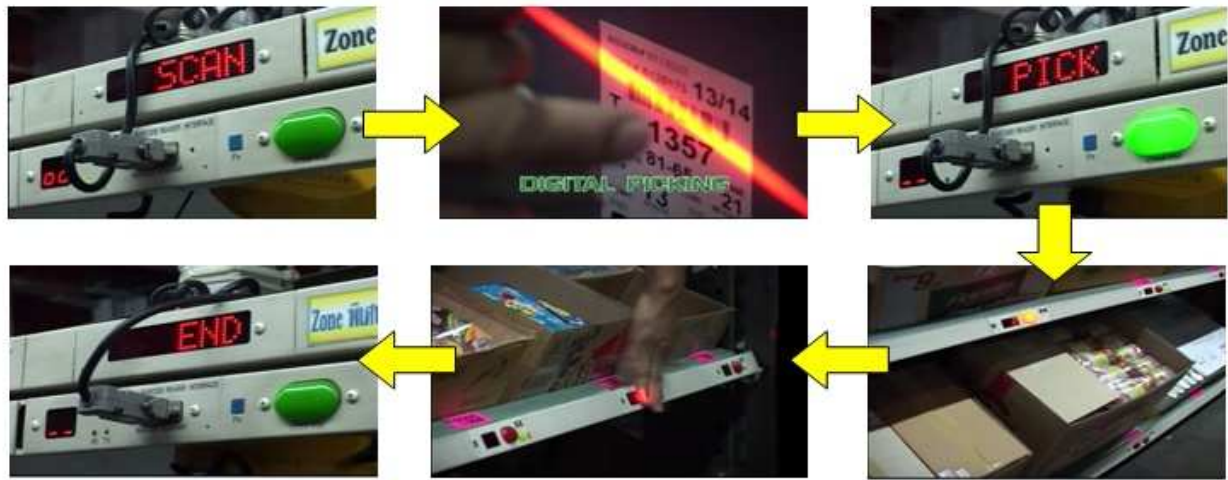
Figure 4.21: Digital Picking Process
Source: Puapairoj, et al., 2009

4.8.3 Back Office System

The back office system can be divided to three groups; Accounting System, Merchandise Analysis System (MAS) or the system used to administer sales, and Product Information Management System. (Puapairoj, et al., 2009)

Both accounting and product information management systems work on AS/400. The product information system handles product information, Purchase order system, Sales reconciliation, Catalog Order, Compilation of sales, purchase order, and receive order in the MIS system, Payroll and Human resource.

4.9 *Logistics Activities*

Logistics activities in focus of the thesis are from DC to the stores. Many activities are involved in and between DC. The flows in dash box represent the working flows within a distribution center. As suggested in the next figure, the overall process is shown, on top of that, two types of the process in a distribution center of 7-Eleven can be divided to inbound and outbound activities.
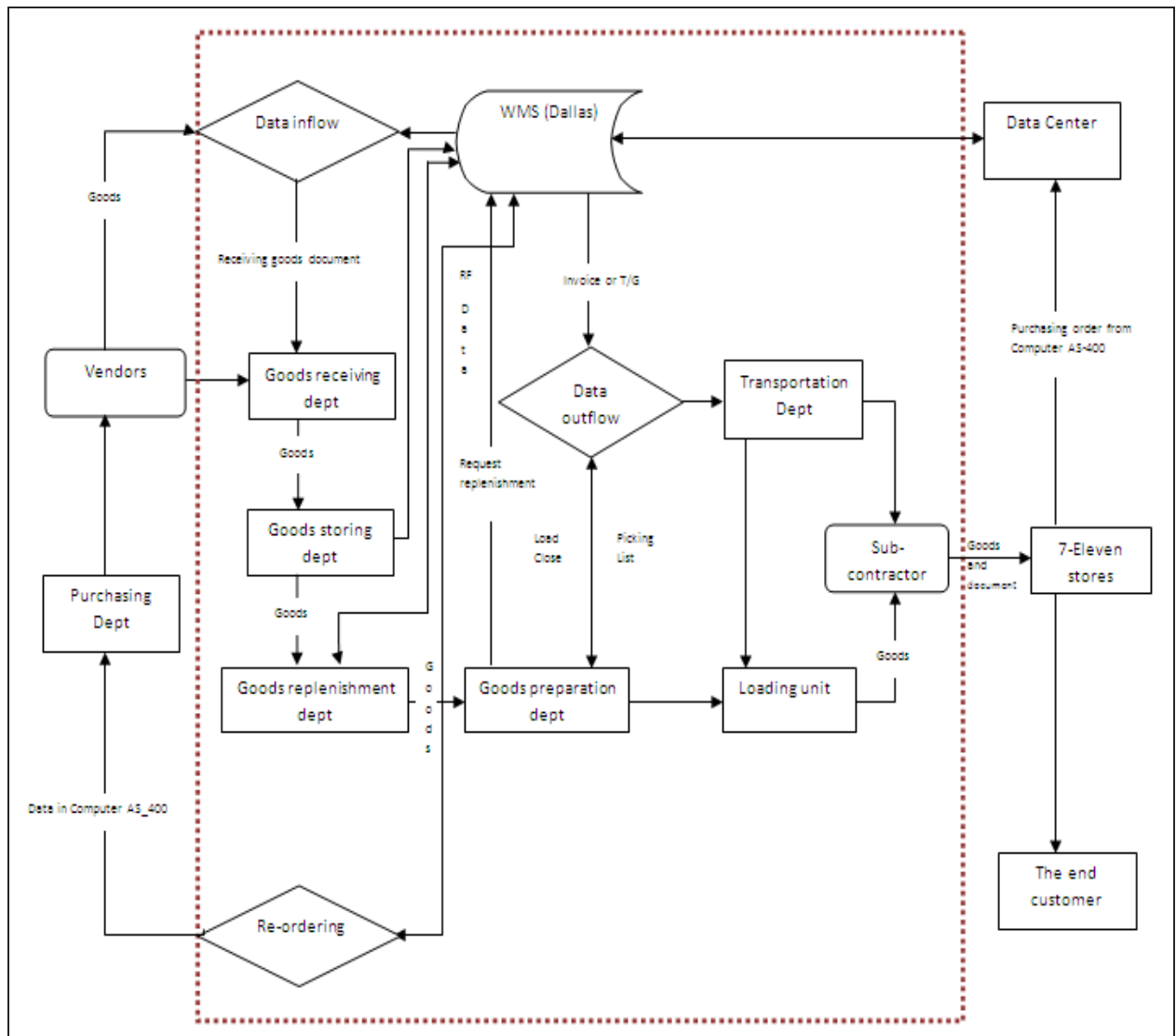
Figure 4.22: Distribution center's work flow of 7-Eleven Thailand.
Source: Adapted from Noisuk, et al., 2006

4.9.1 The inbound activities

The inbound activities correspond to the process of receiving goods. From the research on ABC costing by Noisuk, et al. (2006), the sub-processes are;

Purchasing plan: All of products are divided by categories such as Food, Non-food, Food Service and Supply Used. One personnel monitors 500 SKUs. The purchasing plan has lead time approximately for three working days. The forecasting is based on Moving Average technique. The Purchasing department also has to monitor the fill rate of the stores where the meeting will be held every week together with the Supply Chain team of the company.

Receiving goods: The process begins with the verification of purchasing documents from the supplier as scheduled to transport the goods into DC. The receiving goods activity is based on a Case Receive. There are three shifts of receiving goods per day with the proportion of 30:30:50. In most case, the main suppliers (high volume of shipment) will be scheduled at night shift, for example, Uniliver and Nestle.

Storage activity: To store the product in the DC.

Inventory Control: The process acts as double-checking process in receiving and storing the goods.

4.9.2 The outbound activities

The outbound activities correspond to the distribution of the goods to each store within the serving area of that particular DC. At the beginning of the process, the data from 7-Eleven stores are pulled to the DC. These data show the store's details and the purchasing orders. (Noisuk, et al., 2006) Then the sub-process starts in order from;

Preparation of goods:
- Data inflow: The purchased orders from the 7-Eleven stores reach the DC. These inbound data will be sent to Warehouse Management System (WMS) which all the orders are "Bombed" according the "Set Routing" or the programmed earlier.
- Goods preparation: The preparation of goods is managed by the Case activity, Full case or Break case, in order to load the products in to the car

Loading: In loading process, the DC staffs together with staffs from transport company (Sub-contractor) check the products accuracy with the purchasing orders of that particular voyage. A trip may consist of different destinations where the route is directed from WMS program. (S. Taweesupapong, personal communication, 2009-04-21).

7-Eleven holds weekly meeting with the involved members including dc staff and other sub contractors (transport firms) and facilitating parties to discuss logistics matters or any problems regarding shipment. The service fees (transportation fees) are paid depending upon the difficulty level of particular tasks. For example, transporting within Bangkok and metropolitan areas and transporting to other provinces require different skills and hard work; therefore tasks must be assigned justly for income equivalence and safety (Prachachart Business Newspaper, 2008, and S. Taweesupapong, personal communication, 2009-04-21).

4.9.3 Distribution Center Management

The successful cases of 7-Eleven in every country come primarily from the role of supply chain management where the linkage of each player in the chain are synchronously organized through the use of distribution system and information system in the network. The key to deliver prior product and service lie in the value information from tracking and tracing of sales which enable the short replenishment cycle time for each store, the market analysis and the accuracy of operation in a real time manner. (Nabajyoti, 2007, and The Nation Newspapers, 2009)

4.9.4 Distribution Center

In the very first era of operating chain convenience stores with only the couple of hundreds of stores, 7-Eleven Thailand employed direct shipments from the suppliers to its stores. The lack of efficiency in transportation process by the suppliers negatively caused sales opportunity

and both the quantity and the quality of products. To cope with these problems, 7-Eleven had initiated the DCs plan by renting other DCs and later on had invested into building its own DCs in several locations to supply the stores' demand all over Thailand (Puapairoj, et al., and C. Tuangrattanaphan, personal communication, 2009-05-05).

In 2009, the number of employees within the DCs function is approximately 3,000 of which 2,000 employees work at the two main distribution centers, Bangbuathong DC and Lardkrabang DC. Presently in 2009, 7-Eleven has 7 DCs all over Thailand, two of which are in Bangkok and company-owned. The others are rented. The details are placed in the next sections (Source; Puapairoj, et al., 2009).

DCs in Bangkok area

1. Bangbuathong DC. (DC4) The first invested DC and the main DC covering around 50% of the distribution within Bangkok and nearby provinces. It is also responsible for stores in Southern and Northern part of Thailand. This DC4 consists of several warehouses in its 35,000 plus square meters area (Matichon Newspaper, 2007) which are;
    1.1. Dry Grocery: It is the main product of in DC4 with 80 percent of total products. The area is about 30,000 square meters.
    1.2. Chilled DC (CDC): CDC operates in a control temperature around 4°C. The products kept in this DC are fresh food, milk etc. It has the area around 5,000 square meters.
    1.3. Air-Conditioning DC (ADC): More than 95 percent of chocolate products serving throughout the country have been distributed form ADC.
2. Lardkrabang DC. (DC5) The 7-Eleven owned DC covers another 50 percent of distribution in Bangkok and nearby provinces. The area used for dry grocery is approximately 25,000 square meters while the CDC has 3,000 square meters (Matichon Newspaper, 2007) The Eastern part of Thailand stores have been supplied from DC5.
    2.1. Dry grocery
    2.2. Chilled DC (CDC)
3. Chokchai Ruammitr DC. This DC consists of 2 categories which are
    3.1. Publication DC (PDC): PDC has been used to consolidate all the publications such as newspapers and magazines, stationary and CDs and transported them to stores in Bangkok and nearby provinces together with Samrong DC. The products shipment is twice a day per store.
    3.2. Bakery DC (BDC): BDC is responsible for bakery products category.
4. Samrong DC. Samrong DC has the same usage as the Chockchai Ruammitr DC. It is consisted of one of each PDC and BDC.
    4.1. Publication DC (PDC)
    4.2. Bakery DC (BDC)

DCs in other regions of Thailand

5. Khonkhaen RDC. This DC is the main DC in the north-eastern part of Thailand. Up until now, this RDC is rented. However, the company has invested in its own DC in this

location starting in 2009. Khonkhaen RDC divided into three categories DC; Dry Grocery, Chilled DC and Bakery DC. (Puapairoj, et al., 2009)

 5.1. Dry Grocery DC

 5.2. Chilled DC

 5.3. Bakery DC

6. Chiangmai RDC. Chaingmai RDC covers the products distribution in the northern part of Thailand. It comprised of other two DCs as seen below;

 6.1. Chilled DC (CDC)

 6.2. Bakery DC (BDC)

7. Suratthani RDC. Operate in a same structure as Chiangmai RDC but the main area its covered is in the southern part of Thailand with two minor DCs and a special plus category.

 7.1. Chilled DC (CDC)

 7.2. Bakery DC (BDC)

 7.3. Sub-DC (SDC) – Sub DC is a distribution center which the local products are kept and managed. The idea of SDC is derived from Local Store Marketing thinking to serve the specific needs of the customers in the region.

4.9.5 Shipment, packaging and transportation from DC to stores

Due to the numerous stores, the orders submitted each day for each location can cause inefficient picking and shipment. The order of each store all transported in one shipment can have varied product quantities and types. To ease the process and increase efficiency in DC and the chain, the company divides 2 kinds of packaging or the 'Case' to be shipped to the stores. (Matichon Newspaper, 2007 and Puapairoj, et al., 2009)

- **Full case** – is the preparation for the purchasing order to the store which is a 'full package order' without having the unpacked process, for example, a box full of instant noodles, a full case of snacks and one package of 12 bottles of water.

- **Break case** - is the preparation for the purchasing order to the store which is 'less' than a 'full package order' and needs to be unpacked. The break case always combines many types of products with relatively low volume per shipment such as 3 bars of soaps, 2 toothpastes, which obviously less than full case, and put the ordered goods into the box for the transportation process later on.

Figure 4.23: Break case
Source: Puapairoj, et al., 2009

48

Normally the break case activity is a main activity in the DC because orders from each store typically are the break case basis. The stores only need small number of goods to fulfill demand at each shipping period to well-managed the shelves and inventory in a relatively small store. Regarding to this limitation, 7-Eleven has an innovative stock picking process which will reduce the errors in break case preparation and to increase effectiveness and efficiency through the process. This innovation is called "Digital picking" which is a light-directed order fulfillment system used to pick or take out items from a stored location to fulfill an order for delivery. (C. Tantipaswasin, personal communication, 2009-04-29). The digital picking system (DPS) is a paperless operation to place or put goods.

Figure 4.24: Digital Picking System
Source: Puapairoj, et al., 2009

Moreover, along with the DPS, 7-Eleven has employed the "Zoning" technique to increase the accuracy while picking up the goods. The goods will be categorized at each the 'house number' as to ease the break case preparation. On top of that, the "Seeing" technique has helped to improve the preparation, too.

"Previously, our staffs had to walk to each house and pick the products by reading from the purchasing report. Then we improved the system by using DPS and Zoning technique. Now our staffs walk to each house number where the required products are needed by looking at the signal light (Seeing). We have improved the process from the normal walking technique at the capacity of 350 products per hour/ man to 600 products per hour/ man by using the Seeing technique. It improves the process as well as increasing our shipment per hour, reducing errors and also reducing labor cost as the working hour reduced" – C. Tantipaswasin, (7-Eleven:Bangbuathong DC), personal communication, 2009-04-29.)

The last illustration of value stream mapping in 7-Eleven (figure 4.25) shows the information flows and physical flows according logistical activities between DC and the stores as well as suppliers.
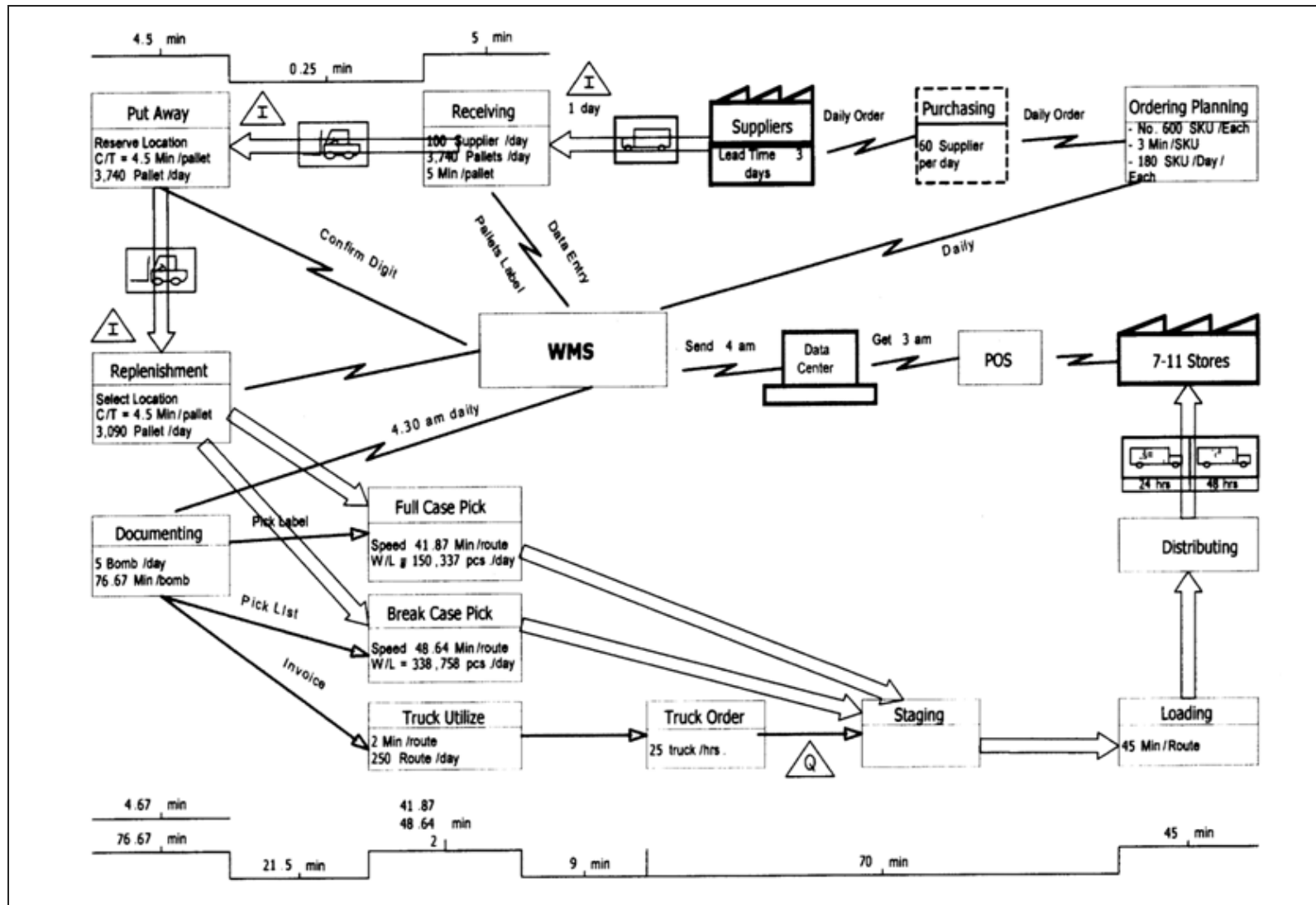
Figure 4.25: Value Stream Mapping of 7-Eleven Thailand as of 2006.
Source: Noisuk, et al., 2006

5 Analysis of an Empirical Study

Within this chapter the analysis of an empirical study is given. The analytical part will be conducted by using the framework of references in the second chapter and the method cited in the third chapter.

5.1 *Competitive Advantage and Strategic Fit within Supply Chain*

The studied company, 7-Eleven, has achieved a lot from retail convenience business. Its result shows on the empirical study that 7-Eleven is the biggest chain format convenience store in Thailand and as well 7-Eleven experienced continuous growth with total revenue of separate financial statement in 2008.

In the frame work section of this thesis, the authors have mentioned the competitive advantages the firm can retrieve by working collaboratively throughout the supply chain. By all means, the business strategies applied to the chain must fit in the sense of market needs. This means, the supply design should give the result of operation matching or exceeding the market 'requirements', which is interpreted from the market perception that more value is adding to product or service, compared to those of competitors.

What are the needs of customer? They are convenience in location, time, and availability of products. As suggested in Spark (1998), one of the success factors of retailing business is the product availability. This is applicable in convenience store, and is very crucial for 7-Eleven.

To start with the synchronized strategy at each level of the chain and in the 7-Eleven, the authors use guidelines from Morash (2001) supply chain strategy, capabilities and performance stated in the frame of references, chapter 2.2 (see figure 2.1) to structure the analysis hereby. The strategies alignment is discussed as follow.

5.1.1 Business Strategy

Working on chain design, as mention in Morash (2001) firstly is determining the Business strategy. The 7-Eleven has exploited the business strategy by differentiate itself to food convenience store with the convenience in the sense of location, availability of the products, services it provides (e.g. bill payment, catalog ordering), and time, as it operates 24 hours a day, 7 days a week. The convenience of time and location along with the food and product availability made 7-Eleven one of the most recognized brands in Thailand. Note here that the food is a perishable product; however, it plays a significant role in sales in the store, thus the high turnover and rapid distribution. In retail convenience store business, product availability is the key business success. The store should be able provide any product the customer wants regardless of time and place.

5.1.2 Supply Chain Strategy

Secondly, the supply chain strategy aims to combine overall chain character. Two ways of doing it are the operation excellence and customer closeness (Morash, 2001). While the operation excellence focuses on supply side dependability. The improvement of chain

performance focuses on the operation convenience and the total cost reduction such as cross-docking, the reduction in inventory, and optimum order fulfillment. The customer closeness emphasizes on the demand side of the chain, the cooperation between chain members is a primary concern. To succeed, everyone must take part in the value-adding products to the end customer.

 7-Eleven chain is designed on the foundation of efficient supply chain to provide the excellent service to the end customer, while the uncertain demand pull at each store has a vital impact on shaping strategy. The chain creates a reliable and dependable atmosphere in the operation to meet the demand. Nevertheless, the varied store locations have different the demand around the clustered locations. The company deals with this alternate implied demand in products by employing Regional Distribution Center so as to properly manage the demand and operation at the store outlets.

On the other hand, the limited space at each store makes it necessary to manage inventory effectively. This means quick response to the demand (sales) and precise replenishment at each store location. The product life on shelf is, therefore short (according to limited shelf space and low inventory). Also, as seen from the product assortment section of this thesis (see chapter 4.4), the food products (perishable products) are accounted for 52% of all products in a store, these products need rapid replenishment. These prerequisites call for a more responsive chain than other businesses such as gas station or lighting industry, or even department store. According to Chopra and Meindl (2007) 7-Eleven positions itself towards responsive dimension to match uncertain demand and product life.

The more responsive chain, the more cost in operation (Chopra and Meindl, 2007). However, from the convenience store view point, the relatively high product price is expected from the market. 7-Eleven use relatively high pricing to match the cost of the chain. The end customers prepare themselves for the 'plus price' in exchange with convenience.

The operation excellence is a foundation to run a business and 7-Eleven is moving itself towards responsiveness to gain more competitive advantage. The balance is made weighted by both dimensions.

Pursuing the responsive chain has an implication on the closeness to other chain members. 7-Eleven has a jointly operation in order fulfill both its customer (the store), and its suppliers by sharing critical data from the market using POS as a tool. The DC furthermore has been the key to distribute the product in a timely manner as well as reducing errors in product deliveries to the stores. According to Mr. Chatwat Tantipaswasin (7-Eleven, Bangbuathoung DC), the implementation of DC of 7-Eleven reduces errors and makes the operation more effective. In the early age, back when firm did not work collaboratively with its customer (data sharing with POS) and suppliers (data sharing and direct shipment), firm had difficulty in expansion because it lacked capabilities to deliver product to the right place at the right time. With the help of joint cooperation from customers to suppliers via IT system and DC, the firm is more confident to expand. Thanks to the responsiveness, the pay-offs have been distributed to every member of the chain since the sales have grown. Mutual benefits are realized and shared throughout the chain.

5.1.3 Supply Chain Capabilities and Combination

Thirdly, the members of 7-Eleven chain have different roles in the business. After determining the chain character, chain works coordinately to seek the solutions that help chain to achieve. According to Coughlin, Anderson, Stern & El-Ansary, 2001, and Anderson & Coughlan, 2002, the combination of capabilities would foster chain in a healthy performance. In empirical part, 7-Eleven standardized its systems to ease the operation between chain's linkage such as order fulfillment system, the IT system, DC and the logistics activities. These combinations improve 7-Eleven efficiency in logistics activities as suppliers do not have to directly send the order to more than 4,700 stores themselves. The lead time is shortened and often fill rate at 3 times per day lessen the risk of lost sales. The availability of product is improved as well as the capability of market coverage since the firm systems can handle numerous tasks that involve many parties. The value is adding to the products and services through the convenience. The successful combination of chain capabilities are proven by a hundred percent store growth in the last five years (2,397 stores in year 2003 to 4,778 stores in 2008). On top of that, 3% constant store growth rate in 2008 proves the supply chain management accomplishment.

7-Eleven has room to grow as suggested in the empirical part. The numbers of population per area and the population served at each store have confirmed that market for 7-Eleven is underserved (compared to other Asia's markets). The expansion trend will be in upcountry of Thailand. To cope with this, 7-Eleven has opened more Regional Distribution Centers and a few more are under construction. Creating the capabilities to support the growth will also result in the success over the company edge. It is the result of the chain design. (Christopher & Towill, 2002)

Heavy marketing data collection from the stores by 7-Eleven, makes it easier for its suppliers to plan and schedule productions and logistics activities effectively. Accordingly, it makes the DCs to work efficiently and effectively to serve store leading to fatter sales for every supply chain's parties.

The benefits of IT relieve inbound and outbound logistics systems. The inbound logistics is more reliable and dependable due to the data from customer side as well as EDI systems. Better inbound operation and planning positively affect both suppliers' and 7-Eleven's logistics cost. The outbound logistics side has accurate data with effective systems in preparing products in full case and break case order form customers' stores. The outbound transportation is supervised by DC and WMS system, while the physical shipment is carried out by outsourcing transport firms.   7-Eleven can better utilize its resources as well as the suppliers. The reliability is increasing as the firms competencies are managed complementarily. The benefits are again shared within the chain all the way to the end customers.

5.1.4 Supply Chain Performance

The performance of the chain received much attention in the consumption side. (Morash, 2001) The firms try to deliver products to the destination to build the ground rules on having product ready for the consumption.

As seen in the operation section in this thesis, the operation between each function aims to facilitate the flows (physical flow, information flow, and financial flow) seamlessly by the use of IT and DC. The transactions are completed within few days, for example, the physical flows from DC to the store would take less than 2 days, or the fill rate in the DC can be held 3 times a day. The financial flow is done automatically which lessens the burden in distribution and information as well as supplying the demand from the outlets benefits much of the demand side performance.

However, the demand side performance cannot be fulfilled if the chain lacks consistency in supply side management. The performance on the supply side must meet the requirements to assure the dependability and reliability to demand management. Cost and overall efficiency of 7-Eleven rooted from the need to survive and to grow. The efficiency is a reaction from the proactive market necessity.

5.1.5 Collaboration within the Supply Chain

Looking at the type of stores, 7-Eleven Thailand consisted of 3 types of stores; the company-managed store, the franchisee, and, the sub-area license franchisee. Of the three, the franchisee type has in total of 1,813 stores out of the overall store number of 4,778 stores in 2008, posting numbers of so-called partners in 7-Eleven business.

From the point of view of the product assortments, 2,500 – 3,000 SKUs are sold at 7-Eleven store. This includes bundle of suppliers (1,200 - 1,500 suppliers) supplying 7-Eleven. Furthermore, the company logistics system, especially the outbound logistics from the DCS to stores location, hires the logistics service providers such as transportation firms.

The collaborative operations involve with many parties are crucial to the firm's success. Working cooperates with each other, as suggested in Whipple and Russell (2007), will boost the triumph level of the chain. The level of collaboration will determine the level of data shared which in turn facilitates the operations, involves planning and smoothes the flow (Frankel et al., 2002). However, with the vast relationship firms engaged, firms exploit the selected relationship as to guide and guard the chain linkages. 7-Eleven chooses more involvement with some suppliers, for instance, co-planning in logistics activities and EDI system. Some relationships are kept in an arm-length manner such as transportation firm.

> Quoted from transport firm, "*We're on the call for service. We only have to send products to the destinations as requested by 7-Eleven. If we cannot provide the service in the time they want, then our quota (for the deliveries) are distributed other transport firms*" (S. Taweesupapong; Transport company, personal communication, 2009-04-21).

In summary, the collaboration with wide range of participants is handled differently to each relationship. The level of collaboration, information shared, planning and learning depends on how the cooperation yields the benefits to the overall chain. The more chain could gain from the synergies means the more preferable collaborative operation to take place.

5.1.6 Sustain Competitive Advantage

The competitive advantages gained from the supply chain are difficult to imitate by the competitors, thus the competitive edge in a more sustainable manner. 7-Eleven has collaborative supply chain and a flexible product distribution. By the use of information technology from the store outlet, capturing fluctuating demand at each store to ease the inventory limitation and providing the product availability. The information also transfers to DC and suppliers as to plan and manage the operation in distributing merchandise effectively and vice versa to the outlets. The ability to work on and strengthen the linkage of the supply chain enables the effective chain and at the same time allows chain to function responsively to the uncertain demand at each store. According to Tracy et al. (2005) not only it increases customer satisfaction, but also improvement in operation. This sustainable competitive advantage 7-Eleven has had made it the number one convenience store in Thailand both in the number of stores and sales with more than 60% market shares in the convenience store business in Thailand.

5.2 *Distribution Related to Marketing and Retailing*

According to Kotzab (2005), retailing business is considered as one of the part in distribution process as it links the production point and consumption point together. 7-Eleven is a retail convenience store having many store branches as to serve the consumers in various places all over Thailand. It is a marketing channel – the gate to the end customer. From Kotzab and Bjerre (2005) point of view, 7-Eleven store format is therefore B2C retailer

From the Functional Understanding of Distribution in Kotzab and Bjerre (2005)'s work, 7-Eleven distribution process varies in time, space (or place), quantity, and quality whenever the node of actors are changed. This can be illustrated as the suppliers send the product to the DC; consequently, DCs prepare the products and send them as ordered to the stores. The place of product changes as the holder of products changes as well as time the products are held. The quantity is dispersed according to order made from the stores in DC and is distributed to the stores. Some products change their form when they are sold, for example food service product (ready-to-eat, sausages etc.)

In distributing process, the suppliers send products to 7-Eleven's DCs as demanded from the store. The demand is forecasted by the 7-Eleven data center which acts as a medium between many actors in distribution process. The nominal flows are exchanged while the products are forwarded to the different nodes as well as data flows. The flows (physical flows, information flows, and nominal flows) are circulated from the production point to the consumption point (Ahlert, 1991 – See figure 2.4). The actors involve within the distribution process are the end customer, the store (here as customer of 7-Eleven), DCs, transportation firms and suppliers.

This thesis investigates the flows, mainly between distribution center and the stores. Main actors and the changes of space, time, quantity and quality are the ongoing process which in turn add value to the products and are served to the end customer through the store.

5.3 *Distribution Channel Management*

7-Eleven runs a chain convenience store consisted of more than 4,700 store outlets. In choosing channel structure, the firm seeks a compatible form that can be useful for the entire outlet as to ensure the product availability at the stores. Same as suggestion in Gattorna and Walters (1996) for the alignment and compatibility in operations, 7-Eleven standardizes the store system and operations, links them in the system within the company which is employed interchangeably to the store, DC, the company and its suppliers and LSPs.
The trade-offs between channel of distribution has been developed to better serve the effectiveness in the outlets. In the very first year of the business, 7-Eleven distribution was relied on the direct shipment from the suppliers to the stores. Even though the store number was only one-tenth of today's figures, the difficulties occurred since many deliveries were transported to the store each day with the unreliable schedule. This effected the store performance due to availability of the products, also the inefficient logistics cost. Nowadays, the company has changed the distribution channel management by using Distribution Center as a facilitator for the logistics and operation efficiency for the whole supply chain. The implication DC has on the distribution management are discussed later in this thesis.

7-Eleven is a retailer acting in corporate with other linkages to transfer the goods to the consumption points. Handling more than 4,700 outlets or marketing channel, 7-Eleven consolidates the supplies from suppliers, subsequently manages the DCs in distributing goods as demanded from the stores by using transport firms. These DCs have two ownership types, the company-owned and the rented from LSPs. In addition, transport firms are outsourced. Putting together, 7-Eleven uses the channel management by using middlemen which are LSPs and transport firms to enhance the firm's capacity.

The trade-offs, as suggested in Gattorna and Walters (1996), has to be made between the quality of services and cost. In this sense, 7-Eleven gained advantages from employing agents with increasing capacity and service level. These elements fuel the growth of the company as well as increase responsiveness to market demand in an efficient way.

 The distribution system of the firm is not very complicated even though firm engages with many agents especially, the transportation firms. The arm-length relationship is employed. Since they are selected primarily on the standard-based such as, number and type of the cars, cost of service and the ability to meet the capacity firm settles on the given voyage quota.

According to, the intensity-of-distribution from Etzel et al., (2004), the exclusive distribution is exploited in 7-Eleven distribution management. The store needs to be standardized with the set of systems, operations to maintain and control the service level in handling goods to the end customer (Kotler, 2000). The product sets are also included in this sense.

5.4 *Warehousing and distribution center*

According to the literature of the distribution center, managing the company's distribution center has a huge effect for the company (Langevin & Riopel, 2005, and, Ackerman & Brewer, 2001). As mentioned in the empirical part, the company had managed its distribution by letting its suppliers distribute the goods and products directly to stores. This means that 7-Eleven itself did not have its own DC at that time. For this reason, problems of the delay of

the goods and products arose. It can lead to cost of lost sale. Afterward, the company came up with the first plan by using rented DC which was considered as public warehouse. Of course, it shows better performance, the products and goods could be sent more effectively to the stores and to ultimate customer. 7-Eleven can solve the problem of delayed products. Besides, if the company has products and goods in hand at all time, it would serve all stores and customers better. As a final point 7-Eleven has invested in their own distribution centers so which mean the company will have more capability to have more flow of goods and product. It can be referred to Perreault and McCarthy (2003)'s statement that new distribution centers are bringing massive improvement to physical distribution area.

As we can see from the empirical study, the company does not have distribution centers only the central part, but also in every region of Thailand .This means the company can perform even more flows of the goods and products to all stores and to final customers. Having Distribution Centers surely gives the company competitive advantages.

5.4.1 Effective and Efficient Distribution Process

Warehouse and Distribution center are functioning as the linkage between the supplier and the market. These nodes consist of activities that facilitate and prompt right products to be delivered at the right place and at the right time. This thesis uses the term warehouse and DC interchangeably since DC is in fact one kind of warehouse (Coyle at el., 2003; Higginson & Bookbinder, 2005, and Frazelle, 2002). Unsurprisingly, 7-Eleven as a retailer and chain convenience store has contribution the warehouse and DC to bridge the flows which enables firms and its customers (stores) to gain operation effectiveness. The challenges lie on the fact that many outlets of the store are widespread throughout the regions. 7-Eleven's DCs enable the distribution of merchandise in time to match the demand in each consumption point.

7-Eleven DCs proved to cut costs of logistics through the value chain. It is improving the service level to the store which makes it possible to please the end customers with convenience. The confirmations to this are the rising number of suppliers who submitted to deliver their products to DCs rather than direct shipment to the stores, and the correction in distribution system in the very first years of business when the store experienced lost sales due to late delivery.

"The suppliers gradually feel the better change in their logistics systems" said the 7-Eleven's staff (C. Tantipaswasin; Bangbuathong DC, personal communication, 2009-04-21).

The transport firms can also improve their productivity according to the DC system in cross-docking process. The shipment can be deferred in appropriate time to avoid the traffic congestion in Bangkok and vicinity. The 7-Eleven DCs helps to reduce costs and boost up the services of the whole supply chain.

5.4.2 The Ownership Dilemma

7-Eleven Thailand has, in all, main 7 DCs in covering Bangkok and the Upcountry of Thailand. The necessity of having DCs is to support the operation efficiency, however, investing in DC costs big dollars. 7-Eleven manages to rent the DCs in the less predominant part in Thailand, also invest its own DCs in Bangkok and Northeastern part of Thailand.

According to Perreault and McCarthy (2003), both public and private warehouses have risk in different dimensions. In the intensive distribution area such as Bangkok, the company uses private DCs which are vulnerable to the success of the company. Having low risk-barring when looking at space requirements, the extension of contracts and controls, also the leverage of favoring the high utilization make a suitable choice of private DCs.

On the contrary, in regional part such as Chaingmai or Suratthani (North and South of Thailand), or the relatively small DCs used to complete the distribution in some product categories, for instance newspaper or CDs, are rented. The public DCs have a complete set of service when comparing to the private ones. Nevertheless, they have less compulsive cost element as well as the risk on extension of the agreement. However, they provide 7-Eleven with more flexible operation.

5.4.3 The Activities in DC

The main activities in 7-Eleven DCs are common with receiving the products from suppliers and ship the product as ordered. Having DCs located in 7 different locations reduce the necessity of having warehouse and holding inventory in the overall chain (Perreault & McCarthy, 2003). It facilitates the flows of products (Higginson & Bookbinder, 2005). As a result, a high-demand product is handled more successfully.

According to value stream mapping of the company as seen in figure 4.25, the primary activities of DCs are not deviated much from Coyle et al. (2003) basic activities in figure 2.9. Rather, the differences are much in the advanced technologies firm employs. The assistance in WMS, VMI and EDI systems have given the chain the ability to outperform the standard guide. Information flows that source from the market through the technologies offer the whole chain with the right ways of managing DC from the input (inbound logistics) to internal DC processes (put-away, replenishment, order picking, cross docking staging, and loading), and to output activity (shipment to the stores).

5.4.4 Technology Concerned within DC

7-Eleven applies several IT systems to ease the communication and planning in DC as to aid every process and parties involved. From the stores, the purchase orders are collected and complied to ensure the corrections of orders. The Data Center functions as the analysis unit and distributes the information concerning particular party.

In DC, WMS system relieves the work load and reduces 'manual' working process. It provides firm with accuracy which, accordingly, increases productivity, effectiveness and efficiency in sequence tasks such as order planning, receiving and put away products in storage, replenishment activities, documentation, and routing the trucks.

EDI system and VMI are also in use to facilitate the communication and planning supplies. Using these systems helps 7-Eleven supply chain to response quickly to market demand. It is also helping in the cost reduction in logistics activities both internal and external firms.

These technologies enable 7-Eleven to respond quickly to market demand. The most interesting part can be seen from the supply chain point of view; the success is based upon

the integration between members which is enabled from information sharing and the ability to commute the information (Stefansson 1999; Waller et al., 2001; Frankel et al., 2002; Perreault & McCarthy, 2003; Higginson & Bookbinder, 2005, and Whipple & Russell, 2007). Using IT has induced the positive changes to the supply chain in 7-Eleven case.

5.5 *IT-Application for Retail Store Management*

IT application in the store is the gate of retrieving valuable data from the market. It represents the convenience through the eyes of customers with rapid and accurate service. The integrated information system of 7-Eleven is one of the important jigsaws that merge the operation from each of the function of the supply chain members. The valuable information collected from the end customer has made Demand Pull thinking become more and more captive and achievable. By employing information technologies, 7-Eleven supply chain can exploit data efficiently. Not only have these tools driven the knowledge and innovation through the use of data, but also the efficient operation in an integrated system.

IT is a vital factor in managing new format retailing. It has an implication in 7-Eleven success. This section is the analysis on IT and its application in the store and also depicts the capabilities and benefits of IT usage in 7-Eleven.

Firstly, the IT systems in 7-Eleven's store create competitive advantages to the company. With IT tools, the company connects supply chain in a more seamless way, generating the integration and collaborative efforts in adding value to the products. POS, for instance, collects market data to be used in market analysis and marketing plans. The analysis based on POS data are Sales Analysis of Product Categories over time, SKU analysis over time, Waste and Disposal analysis, Sales Trends by SKU, Sales analysis by day and time, Slow-moving items, sales and customer number overtime, reconcile data, etc (Dai, 2004, and, Harrison & Van Hoek, 2005). The major key on these analyses is to generate more sales by purchasing and storing right product at the right place at the right time.

Moreover, these data also sent to suppliers as to act responsively to the consumption. The IT tools used in store simplifies the operations, reduce work force and errors, captures and forecasts demand, collects market data as well as easing the documentation and accounting tasks (Coyle et al., 2003; Dai, 2004; Kotzab, 2005, and, Mulcahy & Sydow, 2008). These benefits originate the sustainable competitive advantages for 7-Eleven. It benefits 7-Eleven's supply chain as well (Carr, 2004).

Secondly, IT tools facilitate operation efficiency and effectiveness. The tools are used to reduce time, errors, and cost which would never be possible having practicing manual operations (Dai, 2004; Kotzab, 2005, and, Mulcahy & Sydow, 2008). The uses of pace technologies such as barcode, EOB, SC and POS have given the competitive position to the firm.

Thirdly, the company makes use of IT tools as a business weapon as it can collect and convey the customer requirements to the upstream part of the chain. The upstream then can manage to satisfy those requirements.

In summary, IT in 7-Eleven stores helps the company to build the sustainable competitive advantages from the ability to collect data involved in marketing plan and strategy. The data are used to increase sales possibility by keeping popular product on shelves. To perfect the operation, IT benefits the back office system making 7-Eleven be able to enhance the operation level with less cost and time. The high degree information technology becomes "General Store Information System" that outperforms that of competitors. The advanced technology builds the barriers to entry in the market as the firm grows rapidly by operational efficiency and valuable information from customers.

6 Conclusion

In this chapter, the authors give summary on the entire research thesis; discussion on the analysis part the answer to the purpose of thesis is clarified. The authors also give opinion on future research.

This research aims to investigate and describe how 7-Eleven managed and operated its retail convenience business in several aspects; strategic fits, distribution and IT, which support the 7-Eleven's activities and how they contribute the competitive advantages to the firm as mention in the purpose. The case study is employed to give an example of a retail convenience store business and its operation linkages, internally and externally. The selected company is 7-Eleven Thailand which is the market leader performing an extraordinary growth, challenging the distribution with multi store locations at 4,778 stores in 2009. The company has the highest sales and stores numbers compared to its competitors in Thailand's market. It shares about 63 percent of the total market share in convenience store sector. It is also ranked on the third place in number of 7-Eleven store trademarks in global scales.

The company experienced distribution difficulties at the beginning of business. Poor performance came primarily from the lack of collaborative operations from each connection in supply chain.   While retailing is the gate way to the consumption point, it is referred to as market channel to the goods. The defects in logistics and distribution activities are putting overall chain performance down, let alone retail firm itself.

To cope with this, the supply chain needs coordinated strategies. Framing the business strategy to shape up working tactics throughout the chain is a must. The retailer determines its strategy, and draws the cooperating actions and inter-firm strategy further to others member of the chain; as to succeed in business implementation. In 7-Eleven Thailand case, the company uses differentiation strategy to market itself. The differentiations in convenience, in term of location, operating hours, products and services availability - even some special products such as ready to eat food and dairy products - are used to boost up sales. Moreover, differ in store location, demand pattern, space limitation, and perishable goods need a quick response to demand. Challengingly, the company must concentrate on the responsiveness throughout the supply chain up and downstream. However, the responsiveness cannot be done with the proper amount of effectiveness and efficiency operations that ensure a reliable and dependable supply chain. The operations and distribution are delivered cohesively.

Accordingly, firm seeks to manage its supply chain to determine the chain strategy by utilization of the members' capabilities through combinations and joint development programs as seen in product development program, the bridges of technologies, and collaborative functions. Combinations of capabilities would yield a healthy performance. Of course, these supply chain management perspective require data sharing, trust, mutual benefits and collaborative operations to facilitate the flows of information, and physical product as well financial flows. Put in another word, logistics flows must be achieved in order to gain the 'synergies' in supply chain operation.

However, in seeking motivations to enhance cooperation to overall chain, firm must ensure the participants in gaining from the synergies. The more realistic benefits the participant gain, the more preferable collaborative operation takes place. This can be seen in the rising number of supplier participating the EDI and VMI system.

Supply chain management not only a crucial factor to the retail business success, but also the mutual benefits share across supply chain. Nevertheless, supply chain management may not be proper administered if it lacks of synchronization of 'the fitness' between players. A single firm may employ the business strategy to gain advantages over it competitors; however the imitation might take place more easily than the whole supply chain competitive edge. The resources to strengthen the chain take longer time to achieve. The right combination of capabilities and the easing tools must be equipped to ascertain the sustainable competitive advantages the whole chain surely gets from the cooperation.

7-Eleven supply chain is an example of good collaborations of chain member in which create sustainable competitive advantages to the firm. The firm makes use of the fitness strategy to run a superior logistics and distribution management, supporting the proactive market scheme.

The distribution management focused heavily on distribution of goods to the various store locations with short lead time. In 7-Eleven case, the lead time for order to be fulfilled is approximately within 24 hours, or not exceeding 48 hours. This short lead time distribution has been contributed to the IT systems and Distribution Centers. It is logistics.

The firm clusters distribution areas for each DC located in regional part, Regional Distribution Center (RDC), and Bangkok. Using clusters make possible of handling flexible demand with small but frequent order from the stores. RDCs are also flexible to the company growth plan that tends to expand in municipal provinces. However, the company uses both private and public warehouse/DC to guard against the growth pain as well as financial prerequisites.

The IS systems and IT systems bridge supply chain member together to improve the services such as order fulfillment processes, the documentations, accounting, and warehouse management system. IT systems used help to standardize data as to reduce time and risks associated with communication process, moreover, eliminate the non-value adding and overlapping activities. It also supports the learning and developments among the chain members. The innovative thinking and technology embracement facilitate distribution process with effective decision, efficient operations with more responsiveness to market demand.

IT applications in the store ease the store's work flows, reduce workforce and feed market information to 7-Eleven and upstream suppliers. This information is used to forecast the operations according to market demand. POS, EOB, and store controller (SC) are the basic IT tools in the store, enhancing the inventory management, order fulfillment activities, guide the order forecast that result in higher sales and profits. The linkage has lifted the chain performance in accordance with every member.

Information system and information technology connects supply chain together. DC plays an important role of distributing goods to the right place right time at the quality agreed. These two factors embrace the succession of retail business in facilitating operation across relating

parties in time, offering products availability at the outlet. The superior logistics management places firm in the leading position and giving firm competitive edge over the competitors. Nonetheless, these function strategies cannot be prevailed successfully without the collaborations of firms in supply chain. The firms must certain on the agreements of chain strategy and fitness to direct the big picture of business design, then working in details in their own parts, to together reach sustainable competitive advantages.

Future Research

Move on to the next research topic, the authors see the connection between supply chain management, enabling IT, and retail management tightly tied together. To be able to generate sales in retail industry, knowing to response to the market is crucial. Moreover, the succession in retail also depends on the sales per slip which is helped through the category management perspective.

Efficient Consumer Response or ECR puts forth those mentioned criteria believed to be the key success factors to retail business. However, pursuing ECR would need a help in logistics and distribution systems. Again, the connections to the supply chain management also have implication to the application of ECR.

However, the evidence of success case of ECR is controversial. Some firms can achieve and benefits enormously, while some are failed. While retail industry welcomes ECR techniques, self-estimation of firm's capabilities should be identified before embracing ECR to be implemented. The further research on the key success factors of bringing up as well as the failure case of implementing this program are worthy to investigate.

7 Appendix

Appendix I: Abbreviations

ABC	-	Activity-Based Costing
ADC	-	Air-Conditioning Distribution Center
BDC	-	Bakery Distribution Center
CDC	-	Chilled Distribution Center
CSCMP	-	The Council of Supply Management Professionals
DC/DCs	-	Distribution Center/Centers
DPS	-	Digital Picking System
DSD	-	Direct Store Deliveries
ECR	-	Efficient Consumer Response
EDIFACT	-	Electronic Data Interchange For Administration, Commerce, and Transport
EDI	-	Electronic Data Interchange
EOB	-	Electronic Order Booking
IS	-	Information System
ISDN	-	Integrated Services Digital Network
IT	-	Information Technology
MAS	-	Merchandise Analysis System
MIS	-	Management Information System
PD	-	Physical Distribution
PDC	-	Public Distribution Center
P/O	-	Purchase Order
POS	-	Point-Of-Sale System
RDC/RDCs	-	Regional Distribution Center/Centers
RFID	-	Radio Frequency Identification
SC	-	Store Computer
SCM	-	Supply Chain Management
SKU/SKUs	-	Stock Keeping Unit/Units
SQL	-	Structured Query Language
TC	-	Terminal Controller
WMS	-	Warehouse Management System
VMI	-	Vendor Management Inventory

Appendix II: Interview Questions with 7-Eleven Thailand

The company has three types of stores, what are the reasons behind?

How does the company select the distribution channel? Please explain.

How does the company decide on the location of the store?

Does the company have its own DCs or warehouses? What are the types of ownership?

Do all types of store use the same retail concept?

Which of Retail format and retail strategy does the company most focus?

In regional area, does the company have the Distribution Center? What are their capacities? The company has expansion plan in the number of stores; is there any supporting plan in operation? Please explain.

Please explain the activities and system in the Distribution Centers?

How does the company deal with the short supply with the product form the supplier? Does the company have more than one supplier for similar kind of product?

Any contingency plan if there are more store each year and have the company decide to put up the new warehouse?

What is the lead time the suppliers take in delivering product to DC and the lead time from DC to the stores? Is there any difference with each supplier and each store?

What kind of WMS does the company use? How does it help firm's operation?

How does Information system help in firm's operation?

Are there any training programs for the staffs as well as the involve distribution actors in the chain?

Appendix III: Interview Questions with Transportation Firm

Please explain your working process with 7-Eleven.

Do you plan the transportation routes?

How is the incentive being calculated?

Does 7-Eleven provide you with any tools, such as GPS?

Is there any development program held by 7-Eleven?

Can you take part in setting performance measurement?

Appendix IV: Interview Questions with Supplier

Please explain your working process in distributing goods to 7-Eleven.

Do you use information system compatible with 7-Eleven?

Is there any development program held by 7-Eleven?

Do you think you have the mutual benefits operating with 7-Eleven?

Can you take part in setting performance measurement?

Appendix V: Interview Questions with Financial Analyst

What is the market condition in commerce sector in Thailand?

How is competition within this sector?

Please give your comment on the growth trend.

Please give your comment on 7-Eleven business performance.

What do you think about the expansion of 7-Eleven?

Appendix VI: Interview Information

Name	Company	Position	Type of Interview
Chaiwat Tantipaswasin	CP ALL Plc	HR- Bangbuathong DC	Telephone
Surasit Taweesupapong	Supaphong Transport CO.,LTD.	CEO	Telephone
Chatrchai Tuangrattanaphan	-	Ex-management level in CP All	Telephone, Email
Apinporn Soisuwan	Supplier (Confidential)	Sales and Distribution department	Telephone, Email, MSN
Narisara Sodchuenjit	ThanachartBank Plc	Investment Analyst (Senior assistance manager) Capital market and Derivatives Investment Department	Telephone, Email, MSN

8 Reference

Anderson, E. and Coughlan, A.T. (2002), A channel management: structure, governance and relationship management, In Weitz, B.A. and Wensley, R. (Eds), *Handbook of Marketing*, London: Sage Publications, pp. 224-47.

Carr , N.G. (2004). *Does IT matter? Information technology and the corrosion of competitive advantage*. Boston, Mass: Harvard Business School Press

Chopra, S., & Meindl, P. (2007). *Supply chain management: strategy, planning, and operation. 3. ed. (International ed.).* Upper Saddle River, N.J.: Prentice Hall, cop. 2007.

Christopher, M., & Towill, R.D. (2002). Developing market specific supply chain strategies. *International Journal of Logistics Management*, 13(1), 1-14.

Citi Research and Analysis. (2009, March 6). Company *Focus: CP ALL*. Citi Research and Analysis. [Equity analysis]. (Available from Citi Research and Analysis, Thailand)

Coelho F., Easingwood, C. & Coelho A., (2003), *Exploratory evidence of channel performance in single vs. multiple channel strategies*, International Journal of retail & distribution management, Vol. 31, pp. 561-573.

Collis, J., & Hussey, R. (2003). *Business Research: A practical guide for undergraduate and postgraduate students,*(2nd ed.). Basingstoke: Palgrave Macmillan

Coughlin, A.T., Anderson, E., Stern, L.W., & El-Ansary, A.I. (2001), *Marketing Channels*, Upper Saddle River, N.J.: Prentice Hall.

Coyle, J.J., Bardi, E.J., & Langley, C.J. Jr. (2003). *The management of business logistic: A supply chain perspective*, (7th ed.). Cincinnati, Ohio: South-Western/Thomson Learning, cop. 2003

CP ALL Plc. (2009). *Annual Report 2008*. (Available from CP ALL Plc., Thailand)

CSCMP. *The definition of supply chain management*. Retrieved May 17, 2009, From http://cscmp.org/aboutcscmp/definitions.asp

Dai, S. (2004, Sep). Knowledge Creation System in Seven-Eleven Japan. Journal *of Electronic Science and Technology of Chaina*. Vol2 (3) , 92-97.

Department of Business Development - Ministry of Commerce. *Retail business development in Thailand.* (2004). Retrieved April 18, 2009, from www.thairegistration.com/mainsite/index.php?id=1706

Disney, S.M., & Towill, D.R. (2003). *The effect of vendor managed inventory (VMI) dynamics on the Bullwhip Effect in supply chains,* Logistics Systems Dynamics Group, Cardiff Business School, Cardiff University, Aberconway Building, Colum Drive, Cardiff CF10 3EU, UK.

Ernest, H. R. (1991). *Retail merchandising, 2nd edition,* New York: Macmillan: Maxwell Macmillan International

Etzel, M.J., Walker, B.J., & Stanton, W.J. (2004). Marketing, 13th edition, In Etzel, M.J., Walker, B.J., & Stanton, W.J. (Eds). *Channel of distribution*, Boston, Mass.: McGraw-Hill/Irwin.

Feeny, A., Vongpatanasin, T., & Soonsatham, A. (1996).*Retailing in Thailand.*International Journal of Retail & Distribution Management, Vol 24, No.8.

Fernie, J., & Sparks, L. (1998). *Logistics and retail management: insights into current practice and trends from leading experts,* (2nd ed.). London: Kogan Page

Frankel, R., Goldsby, T.J., & Whipple, J.M. (2002). Grocery industry collaboration in the wake of ECR. *International Journal of Logistics Management*, 13(1), 57-72.

Frazelle, E. (2002).*Supply chain strategy the logistics of supply chain management,* New York: McGraw-Hill.

Gattorna, J. L., & Walters, D. W. (1996). *Managing the supply chain: A strategic Perspective*. Basingstoke, Macmillan.

Gattorna, J. L., & Walters, D. W. (1996). Managing the supply chain: A strategic Perspective. In Gattorna, J. L., & Walters, D. W. (Eds). *Distribution channel design and management*, Basingstoke, Macmillan

Hague, Paul N. Hague, Nick and Morgan & Carol-Ann (2004), *Market Research in Practice: A Guide to the Basics*, Kogan Page, Limited, UK, P.32.

Ishikawa, A., & Nejo, T. (1998).*The success of 7-Eleven Japan (English translation).*Singapore: World Scientific Publishing

Jitpleecheep P (2009, March 3). 108 Shop to open new 200 stores. Retrieved 2009-06-01, from http://www.bangkokpost.com/business/retail/14235/108-shop-to-open-200-new-stores

Jobber, D. (2007). *Principles and practice of marketing*, (5th ed.). Maidenhead, McGraw-Hill.

Journal of Logistics Thailand. (2005, March 3). Logistics of 7-Eleven. *Journal of Logistics Thailand*, volume 3 , pp. 16-33.

Kent, R. (2007). *Marketing Research: Approaches, Methods and Application in Europe*, Thomson Learning, UK

Kotler, P.(2000). *Marketing management,* (10th ed.).Upper Saddle River, N.J.: Prentice Hall

Kotzab, H., & Bjerre, M. (2005). Retailing in a SCM-perspective. In Kotzab, H. (Ed.), *Retailing the the contect of IT and distribution* (p 14-29). Copenhagen: Copenhagen Business School Press

Kotzab, H., & Bjerre, M. (2005). Retailing in a SCM-perspective. In Kotzab, H. (Ed.), *IT application in retail store* (p 94-107). Copenhagen: Copenhagen Business School Press, 2005

Kotzab, H., & Bjerre, M. (2005). Retailing in a SCM-perspective. In Kotzab, H. (Ed.). *The automation of retail logistics* (p 115-140). Copenhagen: Copenhagen Business School Press, 2005

KPMG. (2009). *Auditor Report - CP ALL Plc 2008*. [Auditor Report Year end 2008]. (Available from KPMG Phoomchai Holdings Co., Ltd., Thailand)

Langevin, A., & Riopel, D. (2005). Logistics system: Design and optimization, In. Higginson, J.K., &. Bookbinder, J.H. (Eds), *Distribution centers in supply chain operations*, New York: Springer.

Li, L. (2003). *Seven-Elven Japan*. Centre for Business Education, St. Andrews University

Matichon Newspaper. (2007, October 22). The Opening of DC5-Lardkrabang, boosting 7-Eleven retail strategy. *Matichon Newspaper*. Retrieved April 25, 2009, from http://www.matichon.co.th/prachachat/prachachat_detail.php?s_tag=02lsc02221050&day=2007-10-22&sectionid=0224

Miles, M.B., & Huberman, A.M. (1994). *Qualitative data analysis: an expanded sourcebook.*Thousand Oaks, Calif.: Sage.

Morash, E.A. (2001). Supply Chain Strategies, Capabilities, and Performance. *Transportation Journal*, 41(1), p. 37-54.

Morash, Edward A, Dröge, Cornelia L M, Vickery, Shawnee K. (1996). Strategic logistics capabilities for competitive advantage and firm success. *Journal of Business Logistics*, 17(1), 1-22.

Mulcahy, D.E., & Sydow, J. (2008). *A supply chain logistics program for warehouse management,*(9th ed.). Boston, Mass.: McGraw-Hill/Irwin

Nabajyoti, A. (2008, December 28). *CP Group & Seven Eleven Operations in Thailand*. Retrieved May 2, 2009, from http://insightory.com/view/238//cp_group_&_seven_eleven_operations_in_thailand

National Statistical of Thailand. (2008). *2008 Key Statistics of Thailand*. Retrieved April 25, 2009, from http://web.nso.go.th/en/stat_theme_socpop.htm

Neuman, W.L. (2006). Social *Social research methods: qualitative and quantitative approaches, (*6th ed.).Boston: Pearson/Allyn & Bacon.

Noisuk, S., Songpanich, A., Korsungsak, S., Bhanomyong, R., & Ruji-apa, P. (2006). Distribution Management and ABC Costing: a Case Study of C.P. 7-Eleven Distribution Center. *The Logistics and Supply Chain Acadamic Seminar 8th* , 423-436

Perreault, W.D., & MaCarthy, Jr. E. J. (2003).Essential of marketing: A golbal-management approach, (9th ed.). In Perreault, W.D., & MaCarthy, Jr. E. J.(Eds). *Logistics and distribution customer service*.Boston, Mass.: McGraw-Hill/Irwin.

Perreault, W.D., & MaCarthy, Jr. E. J. (2003).Essential of marketing: A golbal-management approach, (9th ed.). In Perreault, W.D., & MaCarthy, Jr. E. J. (Eds). *Place and Development of Channel Systems*. Boston, Mass.: McGraw-Hill/Irwin.

Prachachart Business Newspaper. (2008, July 24). 7-Eleven Distribution Revolution. *Prachachart Business Newspaper.* Retrieved April 25, 2009, from http://www.logisticsdigest.com/index.php?option=com_content&task=view&id=1900&Itemid=72

Price Water House Cooper. (2005). *FROM BEIJING TO BUDAPEST – Winning Brands, Winning Formats 2005/2006.* Price Water House Cooper 2005/2006 4th edition , pp. 228-236.

Puapairoj, K., Triumlertlum, K., Sukittiporn, K., Prabkri, N., Boonwongkorn, T., Hoonsuwan, T., et al. (2009, May). *Innovative Logistics of 7-Eleven Thailand.* [Paper on M.A., Marketing]. (Available from Chulalongkorn Business School, Thailand)

Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research methods for business students,* (4th ed.).Harlow : Financial Times/Prentice Hall.

Seamico Securities Plc. (2009a, March 9). *Company Update. CP ALL . Thailand.* Seamico Securities Plc. [Equity Analysis]. (Available from Seamico Securities Plc., Thailand)

Seamico Securities Plc. (2009b, March 27). *Industry Update. Commerce .* Seamico Securities Plc. [Equity Analysis]. (Available from Seamico Securities Plc.,Thailand)

Silverman, D. (2007).*A very short, fairly interesting and reasonably cheap book about qualitative research.* London: SAGE

Sparks, L. (1998). The Retail Logistics Transformation: insights onto current practice and trends from leading experts. In J. Fernie & L. Sparks (Eds.), *Logistics and Retail Management* (p. 1-22). London: Kogan Page

Stefansson, G. (1999).*Logistics in an information Perspective.*Department of Transportation and Logistics , Göteborg, Sweden, Chalmers University of Technology SE-412 96.

The Nation Newspaper. (2009, February 3). Homegrown IT Success for 7-Eleven. *The Nation Newspaper.* Retrieved April 26, 2009, from http://www.nationmultimedia.com/worldhotnews/30094847/Homegrown-IT-success-for-7-Eleven

Thietart, R. (2001).*Doing management research: a comprehensive guide.* London: SAGE

Tracey, M., Lim, J.S. & Vonderembse, M.A. (2005). The impact of supply-chain management capabilities on business performance. *Supply Chain Management,* 10(3/4), 179-191.

Ueno   K   (2009).   Message   from   CEO.   Retrieved   2009-05-30,   from
        http://www.familymart.co.th/about.html

UBS Investment Research. (2009, March 3). *Global Equity Research: Thailand Consumer,
        Non-cyclical (sector comment).* UBS Investment Research. [Equity Analysis].
        (Available from UBS Investment research, Thailand)

Waller, M., Johnson, M.E., & Davis, T. (2001). *Vendor-managed inventory in the retial
        supply chain* .Reprinted with permission of Journal of Business Logistics, 2001

Whipple, J.M., & Russell, D. (2007). Building supply chain collaboration: a typology of
        collaborative approaches. *International Journal of Logistics Management*, 18(2), 174-
        196.

Yadin,D. (2002).*The international dictionary of marketing: over 2000 professional terms and
        techniques*. London: Kogan Page.

Yin, R.K. (1994). *Case study research: design and methods* (2nd ed.). Thousand Oaks,
        Calif: Sage

Zikmund, W.G. (2000). *Business research methods,* (6th ed.).Fort Worth, Tex.: Dryden Press.