

# **A SURVEY STUDY OF THAI INDUSTRIES' COMPETITIVENESS AND SUPPLY-CHAIN EFFECTIVENESS AMIDST ASEAN ECONOMIC COMMUNITY INTEGRATION IN 2015**

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## **Abstract**

In year 2015, Thailand, as well as the other ASEAN countries, will be integrated into a single market and production base called the ASEAN Economic Community (AEC). This research is designed to investigate how Thai industries; particularly the petroleum product industry and hotel industry will be affected from the AEC, and how these industries get ready for this challenge. This research has addressed how both industries have been in terms of awareness and preparation to meet the challenges of the new regional economic integration. One of the purposes of free trade area is free flow of goods and services. This research intended to explore realities of petroleum product industry on its supply chain readiness. Additionally, the research will explore competitive advantage of hotel industry amidst AEC integration. The implementation of this research is done by using the SCOR model to evaluate petroleum products industry and the Diamond model to assess the hotel industry. The questionnaires have been distributed to find out realities on supply chain relations and competition of Thai firms within these industries. The survey results have shown that both industries are quite ready for new economic integration. Petroleum product industry has a strong performance in terms of operational and strategy on SCOR model whereas the hotel industry is quite strong in Diamond model. Moreover, on AEC views, this will be a great chance for both industries to gain competitive advantages due to their current ability to compete with others.

**Keywords:** Petroleum products industry, Hotel industry, Supply chain effectiveness, Competitiveness, ASEAN Economic Community

## **1. INTRODUCTION**

In the year 2015, the 10 member countries of the Association of Southeast Asian Nations (ASEAN) will be integrated into a single market and production base called the ASEAN Economic Community. There will no longer be barriers to trade; there will be nothing but the creativity and competence of Thai industry to stand against a tide of new and powerful competition. For the industries that are aware of AEC 2015 and well prepared to meet the challenges, the new economic community will bring the opportunities in the form of a hugely expanded market for their products or services. On the other hand, the local industries that are not alert to the changes that will come with a single open market, and do nothing to prepare

for new economic integration, run the risk of being overwhelmed by strong cross-border and overseas competition.

The major problem for Thai industries is they do not know how to prepare to meet the challenge of AEC and the supply chain management is not effective enough to compete with other members in ASEAN.

Thereby, our team need to do the research to see if Thai industry especially hotel and petroleum product industries are ready and have a knowledge and understanding about AEC well enough. If they are not yet ready, we will provide them the useful insights. Thailand has to be ready not only to compete but also take the lead in what will be a vastly bigger market, with challenges, opportunities, and bigger profit to be made.

## **2. LITERATURE REVIEW**

This part will review the theoretical arguments and concepts that reader might need to know in order to understand what our topic is about. It begins with supply chain management; it is a network of facilities that produce raw materials, transform them into intermediate goods and then final products, and deliver the products to customers through a distribution system. It spans procurement, manufacturing and distribution (Lee and Billington, 1995). And there are two models that used to examine the industries. The first model is SCOR model. It was developed by the Supply Chain Council to assist firms in increasing the supply chain effectiveness following decision areas; plan, source, make, deliver, return (Rolf G. Poluha, 2007), while Diamond model, it was proposed by Michael Porter. It illustrated a substantially different paradigm to assess the competitiveness of a country (Porter M.E., 1990). For the terms of AEC, it is an economic region of ten countries located in Southeast Asia. AEC agreed to integrate into one competitive single market among ASEAN countries with free movement of goods, services, investment, skilled labor, and free flow of capital (ASEAN Secretariat, 2011). Followed by the historical background of two industries, petroleum product industry became one of the most important things in economic and social development since 1868 and also has the highest export value (Direction of energy, 2006). For the view of hotel industry, the first hotel in Thailand started up in King Mongkut period. Since Thailand tourism was established to support the industry in 1960, the hotel industry became popular as its reputation today (Office of national economic and social development plan, 2012).

## **3. METHODOLOGY**

Questionnaire survey was chosen as a main instrument to collect the data. The questionnaire design has developed based on SCOR model to evaluate petroleum products industry and Diamond model to assess hotel industry. The questionnaires were distributed by random sampling from ministry of energy while hotel industry distributed by Hotel list from Thai hotel association. 250 set of questionnaires distributed by postal mail among firms along

the supply chain in the petroleum products industry, covering upstream to downstream such as crude oil, trading, refinery and depot, whereas another 500 set of questionnaires for hotel industry were distributed into each type of hotel in Thailand and cover one to five star hotels. Even though the main instrument is postal mail, some questionnaire were spread by telephone, electronic files and personally administered when the respondent is not convenient with postal mail.

## 4. FINDINGS

The purpose of this part is to illustrate the results from the survey questionnaire and interviews by using Statistical results for social sciences (SPSS).

### 4.1 Descriptive analysis of petroleum product industry

There are 51 completed questionnaires returned (20.4% response rate) for petroleum products industry. The numbers in each factor are shown in the table below.

#### General information

Table 1: Petroleum products industry's information

TYPE OF COMPANY		TYPE OF PRODUCTS						STANDARD THAT COMPANY RECIVED	
Answer	%	Answer	%	Answer	%	Answer	%	Answer	%
Oil drilling	2	Diesel	27	LPG	4	Others	11	International standards organization (ISO)	53
Refinery	3	Gasoline	23	Kerosense	3			American petroleum Institute (API)	4
Trading	86	Lubricant	17	NGV	1			Others	2
Others	8	Fuel oil	13	Crude oil	1			None	41

The survey results were responded mostly from trading company at 86 percent and the remaining were others, refinery and oil drilling. For the types of product, the highest percentage is Diesel for 27 percent and the second and the third highest percentage are gasoline at 17% and lubricant at 17 percent, respectively. The highest percentage of standards that company has got is ISO at 53% and it is about 40 percent of company that do not have any certified standard.

#### Operational on SCOR model

Table 2: Average percentage on SCOR model

	PLAN		SOURCE		MAKE		DELIVER		RETURN	
Type	Average		Average		Average		Average		Average	
	%	Score	%	Score	%	Score	%	Score	%	Score
Oil drilling	100	4	100	4	100	4	100	5	100	5
Refinery	100	4	100	4	100	4	100	4	100	4
Trading	56.8	4	54.5	3	69.8	3	57.1	4	57.1	4
Other	50	4	47.1	3	50	4	55.1	4	55.1	4

According to the 0 – 5 scales on SCOR model, most factors get the average score of more than 3, which means that the company has a readiness for AEC; plan and source get nearly 4 and make and deliver at about 3.5. Only the return dimension gets only about 2.4. The first factor is plan, the majority of each type gets 4 score. The second factor is source, the majority of oil drilling and oil refinery get 4 whereas trading and other types get 3. The third factor is make, the majority of oil drilling, refinery and other types get 4. The table for the last factor, return, shows the same result as the fourth factor.

#### Strategy on SCOR model

Table 3: Performance evaluation of KPI

	RESPONSIVENESS	FLEXIBILITY		COST		ASSET		RELIABILITY (% OF MISTAKE)	
Type	High	High	Extreme	High	Extreme	High	Extreme	Very low	Low
Oil drilling	100%	0%	100%	100%	0%	0%	100%	100%	0%
Oil refinery	100%	0%	100%	50%	50%	50%	50%	50%	50%
Trading	100%	40.90%	59.10%	38.60%	54.50%	48.80%	51.90%	65.90%	29.50%
Others	100%	33.30%	33.30%	50%	50%	100%	0%	33.30%	66.70%

The strategy on SCOR model using KPI to evaluate. The first factor is responsiveness, 100 percent of all types of the company has a high level for delivering their product on time. The second factor is flexibility, 100 percent of oil drilling and refinery have an extreme level to respond for achieving unplanned situation. Whereas trading is nearly 60% and the others is about 33%. The third factor is cost; oil drilling, the majority of trading and half of the others get high return from the gross profit whereas 100 percent of refinery and another half of the others get extremely high. The fourth factor is asset, 100 percent of oil drilling gets extremely high for return on asset and the others get high. It is about fifty to fifty percent for refinery and trading that result in high and extremely high. The last factor is reliability, oil drilling has very low percentage of mistakes (100%). Trading firms produces average reliability (66%) and half of oil refinery have very low rate of mistake on order fulfillment.

## 4.2 Descriptive analysis of hotel industry

The return questionnaire was 127 with full completion, which means all of 127 questionnaires are useable. And it gives 25 percent of response rate. All detail of information is described in each section below.

#### General information

Table 4: Hotel industry' information

TYPE OF HOTEL		HOTEL RATE (STAR)				LOCATIONS					
Answer	%	Answer	%	Answer	%	Answer	%	Answer	%	Answer	%
Independent	84.3	One star	2.4	Four star	25.2	Seacoast	25.2	Business area	10.2	Others	7.9
Domestic Chain	13.4	Two star	8.7	Five star	3.1	Up country	21.3	Mountain area	11.8		
International Chain	2.4	Three star	60.6			City center	19.7	Airport area	3.9		

From 127 questionnaires returned, for type of hotel, more than two-third of respondent is independent followed by domestic chain and international chain. The major percentage of hotel rating is three-star, with the percentage of 60.2%. The second highest is four-star hotels (25.2 %), while other stars are accounted for less than 15 percent. Hotel locations are varied. There are three places that have high percentage (20%). They are seacoast, up country and city center.

### Diamond model

Table 5: Average percentage on Diamond model

	FACTOR CONDITIONS		DEMAND CONDITIONS		RELATED AND SUPPORTING INDUSTRIES	CONTEXT OF FIRM, STRATEGY AND RIVALRY	ROLE OF CHANCE	ROLE OF GOVERNMENT
Type of hotel	Location	Employee skill	Domestic Competition		Intermediary	Flexible plan and able to achieve goal	AEC	Government policy
			High	Extreme				
Independent	61.70%	44.90%	54.20%	12.10%	90.70%	76.64%	76.60%	62.00%
Domestic Chain	76.50%	88.20%	47.10%	17.60%	88.20%	88.23%	58.80%	49.00%
International Chain	66.70%	66.70%	33.33%	66.70%	100%	67.00%	67.00%	73.00%
Total percentage	63.80%	51.20%	52.80%	14.20%	90.60%	78.00%	74.00%	61.10%

Table 5 illustrates the average percentage of respondent who agreed to each factor. To Firstly, factor conditions, the total percentages accounted for 63.80% for hotel location and 51.20% for employee skills. According to Porter M.E. 1990, factor conditions focus on physical resources and human resources. So, the highest average percentage for both areas is domestic chain, followed by international chain and independent hotel. Next, demand conditions, it is shown that the percentage of domestic competition is quite intense. The majority of this factor is high for independent and domestic chain, whereas it is extreme for international chain. Comparing the total percentage of high versus the extreme case, the largest percentage is accounted for by the international chain, reaching the maximum percentage. For independent and domestic chain, the percentages are 66.30% and 64.7%, respectively. Thirdly, related and supporting industries, this factor has the highest percentages compared to other factors. The ceiling percentage is 100%, while the floor percentage is up to 88.20%. For the sequence, International chain is the highest percentage, domestic chain is the second highest percentage and independent is the last one. Fourthly, context of firm, strategy and rivalry, the percentage shows the confirmation that hotel can achieve its strategic goal and has flexible plan. The number on the table shows the percentage of respondent who agreed on both areas, with the overall percentage of 78%. The largest percentage is domestic chain, followed by independent and international chain. Then, role of chance refers to the chance from AEC. The highest percentage is 76.60% coming from independent hotel, then international chain with the percentage of 67% and domestic chain (58.80%). The last one is role of government; the percentage is quite low compared to other factors. The lowest percentage is less than half for domestic chain while the highest percentage is only 73% for international chain.

## 5. DISCUSSION

In this section, discussion covered two industries studied. It began with petroleum product and followed by hotel industry. Analysis was done based on result from SCOR and KPI for petroleum and diamond model for hotel industry.

### 5.1 Petroleum products industry

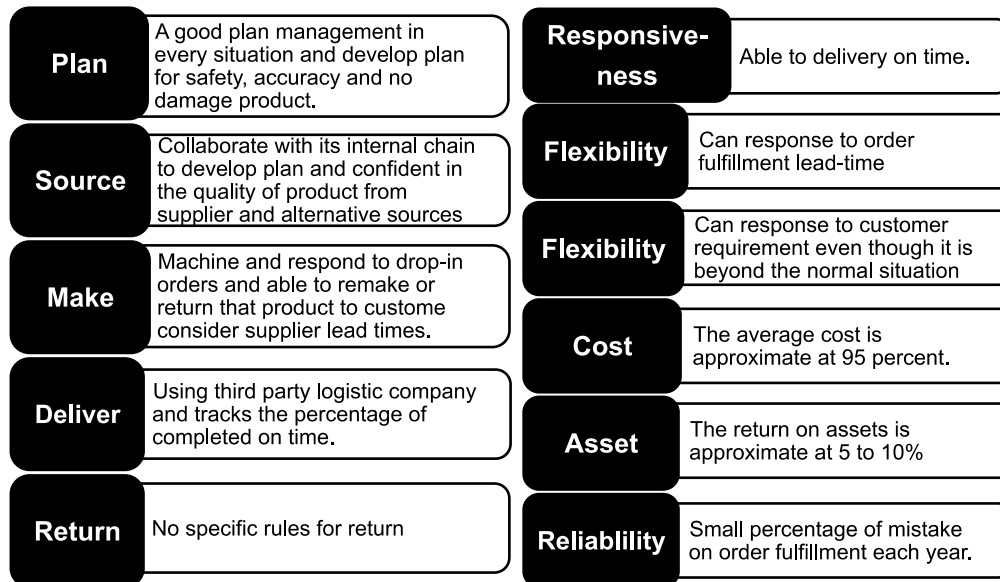


Figure 1: SCOR model for petroleum product industry

For petroleum product industry, there is not much major player in this industry. Most of them work in supply chain system then there are just a few mistakes occur and able to work very fast because of good sharing information system. According to operational on SCOR model and strategy on SCOR model, Firstly, the industry can balance resources with requirement and determining communication along the chain. Secondly, the industry is quite confident in quality of petroleum from supplier and able to find an alternative source. Thirdly, the company can manage the production network, equipment and facilities, and transportation. Fourthly, the industry has a good logistic system and good tracking customer orders on time. Lastly, the industry is able to handle the return of product. In addition, AEC is very important for this industry because Thailand is one of the countries that have very high number of export value to other country and also Asian countries. Some of Thai companies already invest in Asian country and some Thai companies prepare to expand their business to ASEAN countries.

## 5.2 Hotel industry

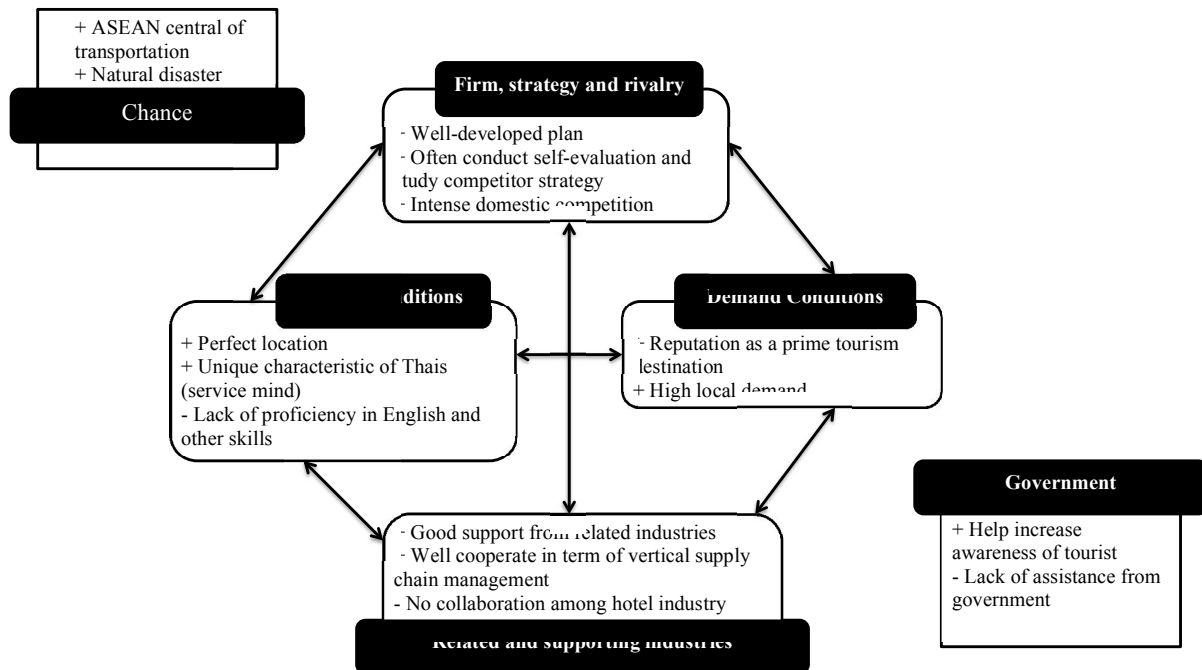


Figure 2: Diamond model for hotel industry

The current circumstance of hotel industry is quite good in view of diamond model as is described below. With a perfect location, Thailand has beautiful scenery. Thailand also is well known for service-mindedness. Thus, factor condition is considered good. However, in some area like employee capability, it is not considered good because of language. Thailand is reputable as a prime tourism destination and a large number of guests are demanding higher quality of hotel rooms. It makes Thailand outstanding in terms of demand conditions. Related and supporting industries are quite strong due to increasing number of guests, creation of awareness by website and other industries. In the context of firm strategy and rivalry, Thailand has intense domestic competition which forces current players to improve their quality of hotel and their business administration. Hence this is a strongest link for Thai hotel industry as analyzed based on the diamond model. Because Thailand is a major player in tourism and is a center of transportation in AEC, the role of chance is quite strong. Additionally, the role of government affects hotel industry in term of helping the increase in the number of guests when the government organizes the festival to attract the customer. In addition, on ASEAN Economic Community-related issue, Thailand has already prepared infrastructure for new economic community like airport and road to other countries. So, the number of customer who came to Thailand for transit will be increasing. Also a large number of hotel is planning to increase the number of branches in other ASEAN countries. On supply chain relations, the vertical supply chain of hotel industry is quite good due to the cooperation between company along the vertical chain. However, the bad thing is collaboration among

hotel. The player in hotel industry is trying to compete with each other as shown in the result from interview.

## **6. CONCLUSION AND RECOMMENDATION**

Thailand has many advantages over other countries for both industries. So, Thailand is able to enjoy the benefit from their strong point. However, there is some area that needs to be improved.

One major concern of petroleum product is support from Thai government. The industry itself as considered based on SCOR model and KPI has shown preparation for new economic integration. Thai government should set policy on this area. Moreover, for the industry that has high demand and are characterized by stringent regulations like petroleum products industry, it is very important to develop its own standard, for example; ISO/TS 29001:2003. From the survey, the result showed that almost 50 percent of the company does not have any of such standard. So, they should have at least one to be more reliable and to improve their efficiency.

From the perspective of hotel industry, there are two main things that should take into consideration to gain competitive advantage. They are the role of hotel owner and role of government. In term of hotel owner, Thai hotel owner should establish training and development program for labor. Due to our findings from questionnaire, almost two-third of respondents said their employees understand their role and response the task correctly but some people still lacks on their ability to communicate with foreigner and ability to use IT equipment. Establishing training and development program for labor serves not only to improve their skill, but also brings more ability to service guests. This should be a unique characteristic of the Thais. Also the hotel owner should encourage themselves and other hotels to be more collaborative in order to increase the strength of hotel cluster. For role of government, there are three things that government should do: 1) enhancing hotel owner to develop their hotel's quality to meet ASEAN green hotel standard in order to get ASEAN green hotel awards. It will enhance customers' trust on the hotel quality. 2) forming a security team to ensure about tourist's safety 3) promoting Thailand as a world leader on tourism by organizing tourism campaign or festival to attract foreign tourists to visit Thailand.

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