

# CONTEMPORARY ISSUES IN MANAGING GLOBAL LOGISTICS AND SUPPLY CHAIN

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## Introduction

Nowadays, there are many factors which impact to changing pattern of global logistics and supply chain management. Especially, accelerating to open trade liberalization between nations and disruptive technology. The global chain becomes shorter and more complex. Global trade and business transaction also disclose opportunities and complexity. Countries support and protect their importers and exporters by increasingly using non-tariff barriers. As a result, these barriers increase unnecessary costs and complexity, including extending longer lead time.

The objective of this study is to examine current status of global logistics and supply chain players and their changing roles. It also identifies future trends and problematic issues of the players in global perspective. Finally, it designs a new conceptual model to effectively contribute Thailand's changing international trade. To achieve the objectives, it reviews related literature and collects primary data through in-depth interviews and questionnaire survey. It concentrates only manufacturing and agricultural goods as a representative. It interviews five companies in each section. Validity and reliability are carefully examined.

## Literature review

Global logistics and supply chain are a rather modernized topic in an academic research, especially in Thailand. The paper reviews definitions of global logistics and supply chain, factors influencing to global trade, contemporary issues in global logistics. Authors (Dornier, P, Ernst, R., Fender, M, 1998; Schary, B. & Skjott-Larsen, T. 2001; Theppitak T, 2008) define logistics and supply chain in global perspective. Dornier et al. (1998) define global logistics as the design and management of a system that directs and controls the flows of materials into, through and out of the firm across national boundaries to achieve its corporate objectives at a minimum total cost. Schary and Skjott-Larsen (2001) support the mentioned definition but they include managing information flow with responsiveness in their definition. Theppitak (2008) defines as operations and management of physical and information flow across nations to achieve common objectives of supply chain members. The review shows that authors quite agree on management of physical flow through national boundary, but some of them ignore importance of information flow and occurring barriers from international operations, particularly non-tariff barriers.

When considering to managing supply chain in global contexts, *Shapiro (2001)* defines as a coordination of a company's activities (both internal and external), with objective is to develop and improve long-term performance of the company and its partners through the chain. As *Christopher (1998)* explains as the management of upstream and downstream relationship with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole. *Cooper & Ellram (1993)* state as an integrative approach to manage the total flow of a distribution channel from the supplier to the ultimate user. Authors point out to importance on building relationship among members, but many definitions lack insights on global perspective like cultures or complexity.

Global players are different, they depend on pattern and scope of trade cooperation and complexity of mutual agreement. Traditionally, they consist of exporter, freight forwarding companies, container freight station or inland container depot, warehouse, port or air port to another country. The importer side has players as similar as export side, but it may additionally increase some players for example distributor, wholesaler or retailer. As transporters or carriers play a role to link part of supply chain together. However, under a new model of global perspective, the chain would be shorter and leaner. Some members may be cut or reduced to achieve cost and value advantage.

Authors (Schary, B. & Skjott-Larsen, T. 2001; Theppitak T, 2008) identify that tariffs and non-tariff barriers (i.e. charging other fees and custom procedure and evaluation are increasingly becoming

future complex and complicate issues for global logistics in term of cost and time management. When reviewing problematic issues often occurred in global supply chain, it shows that nature of conducting a business has been changing. Driving forces (i.e. globalization, information technology and advanced transportation) have pressured to SC members to change the way of doing business. Trend of countries attempts to open trade liberalization or establishing economic cooperation to reduce or eliminate tariff barriers. As a result, invisible barriers like non-tariff measures (TBT and SPS) are becoming serious problem and affecting to supply chain as a whole. To compete in global market, cost advantage and responsiveness will become a key success in global perspective.

### **Research methodology**

Global logistics and disruptive technology are a rather modernized topic in an academic research, especially in Thailand. Its importance is recognized to help concerned importer-exporters to plan, work and control their business transactions. A review of literature is conducted on sources related to global logistics management, and disruptive technology and international business from texts, and international journals. The paper has two major objectives. *First*, related literature has developed and rapidly changed overtime. Therefore, a historical review (traces the development of an issue related to global supply chain over periods, (Newman, 1997, p. 90), and an integrative review (summarizes what is known related to issues of global supply chain at a point in time) will be conducted (Zikmund, 1997, p. 203). *Second*, it is to refine a research idea to facilitate further research (Kervin, 1992). The information gathering stage can be viewed as a preliminary investigation, identified by Emory and Cooper (1991), as a core method of conducting exploratory case study research.

The paper presents globally contemporary issues to facilitate Thai firms for managing their businesses in global context. The paper was used for generating insights to investigate and answer the research questions as follows:

- What is definition of global logistics and supply chain?
- What are factors impacting to global trade?
- What are problematic issues and barriers of Thai importers and exporters in global context?
- What is new conceptual model of managing global logistics and enhancing competitiveness to Thai firms as global players?

The paper uses an *exploratory study* in order to explore pattern of global players and their operations under pressures from trade liberalization and global competition. A questionnaire survey was used to 210 Thai importers and exporters. The 210 questionnaires were distributed and 168 samplings were returned, with 0.80 percent of response rate.

This sampling would be appropriate representative of population, which is accepted and reliable (Sekaran, 2000). It additionally conducted interviews 25 the samplings in Thai language. The semi-structured questions were developed based on research questions and repeatedly asked the same questions to all respondents. Data were be manually used to categories, cluster and analyses the interview data (Miles & Huberman, 1984; Neuman, 1994; Zikmund, 1997; Sekaran, 2000).

### **Finding results and discussions**

The survey shows kinds of businesses, numbers of employees, type of goods and services, problematic issues of respondents when importing and exporting to other countries. The proportions of sampling size are significantly dispersed as representative to all segments of Thai firms. The KMO and Bartlett's test is used to examine appropriation of data for using factor analysis. The result shows that the factorability is accepted, and there are significantly positive relationships between the variables which could group variables within a dimension. The results show that samplings are normal distribution, and it is significantly used as representative of the population.

Table 1 Type of business

Type of business	Percent
.1Importers	27
.2Exporters	45
.3Others (e.g. investors and LSPs)	28
Total	100

The result of survey on kinds of respondents is shown in Table 1. Frequency distributions are classified in three major groups: importers, exporters and investors. It shows that 27, 45 and 28 percent respectively. The result shows that samplings are normal distribution. As China, Japan, Singapore and United States of America are destination countries.

Table 2 Number of employees in respondents

No of employees	Percent
.1Less than 50 persons	13
200-51 .2persons	46
20 .31 500-persons	25
.4more than 501 persons	16
Total	100

Table 2 show profiles for number of employees in respondents' organization. It reveals that 46 percent had 51 – 200 employees, 25 percent had 201-500 employees, 16 percent more than 501 employees, and 13 percent had less than 50 employees respectively.

Table 3 Type of goods and services

Type of Business	Percent
.1Agriculture	32
.2Manufacturing	21
.3Hi-Tech infrastructure investment and related business	12
.4Mineral industry	11
.5Energy	9
.6Information Technology and Communications	5
7 .Others	10
Total	100

Table 3 shows type of sectors of respondents. The greatest number of respondents or 32 percent is in agricultural sector. As 21 percent is manufacturing, 12 percent is Hi-Tech infrastructure investment and related businesses respectively. The questionnaires are distributed to other sectors, but there are few questionnaires to be returned in some sectors for example information technology and Communications firms.

Table 4 Issues related to custom rules and procedures

Issues	Percent
.1Tariffs	29
.2Fees	22
.3Custom procedure and evaluation	20
.4Import license	17

.5Country of Origin	12
Total	100

Table 4 shows problematic issues of Thai firms when import or export to-from countries. The greatest number of respondents or 29 percent is tariff barriers. As 22 and 20 percent of respondents that charging other fees and custom procedure and evaluation. Non-tariff barriers are increasing becoming a serious problem that caused increasing operational costs.

Table 5 Barriers when exporting to partner countries of Thai respondents

Issues	Percent
.1Non-Tariff Barriers within importing countries i.e. label, additional tests.	36
.2Issuing of license, permissions	26
.3Limitation of using raw materials,	15
.4Requirement of VISA and work permit	12
5. Tariff Barriers	11
Total	100

Table 5 shows barriers when exporting to partner countries of Thai respondents. The study shows that importing-exporting firms or 36 percent faced with non-tariff barriers when imported-exported their goods to foreign customers. 26 percent has problem related to issuing of license and permissions, 15 percent is limitation of using raw materials and 12 percent is requirement of VISA and work permit and 11 percent is tariff barriers respectively.

Table 6 Average number of global trade players in each import or export transaction

Issues	Percent
.1Less than 4 players	16
.25-6 players	21
.37-8 players	13
.49-10 players	9
5. More than 10	7
6. Not sure	34
Total	100

Table 5 shows average number of global trade players in each import or export transaction. The study asks the respondents to number of players in each transaction of importing-exporting. The greatest number or 34 percent shows that they are not sure to number of players because of using outsourcing (i.e. freight forwarder). Some respondents or 16 percent identifies that there are less than 4 players (i.e. freight forwarding companies, customer brokers, transporters). Others or 21, 13 and 9 percent identify that there are 5-6 players, 7-8 players and 9-10 players respectively.

Table 5 Contemporary issues in managing global logistics

Issues	Percent
.1Complexity of import-export documents	24
.2Costs of import-export operations	21
.3Uncertainty of delivery time	17
.4Reliability of global players	15
5. Managing global outsourcing	13
6. Consistency of information technology, infrastructure, and facilities	10

Total	100
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Table 5 shows contemporary issues in managing global logistics. The respondents reveal interesting results in managing global logistics. The greatest number of respondents or 24 percent identifies complexity of import-export documentation. Some respondents reveal that costs of operations and uncertainty of delivery time and reliability of global players are problematic issues, including managing global outsourcing and information technology.

### **Discussions and Implications**

The study shows that importing-exporting firms identified that global trade and investment increasingly become more difficult and complex. The difficulty comes from members in global supply chain trying to reduce their costs and increase responsiveness. As complexity occurred from advance technology like the internet, artificial intelligence (AI), robots or using of RFID and modern transportation. It needs firm to adapt and flex to dynamic changing.

The survey reveals that firms lack global knowledge and skills to deal with foreign competitors, especially competitors from developed countries. Thai players in sectors for example agriculture and manufacturing were medium enterprises with loosen cooperation among global supply chain members. Global supply chain players are shorter and professional. Non-tariff barriers (i.e. charging other fees and custom procedure and evaluation are increasingly becoming future problematic issues for global trade in term of cost and time management.

When considering to contemporary issues in managing global logistics, the study reveals interesting issues, for example complexity of import-export documentation, costs of operations and uncertainty of delivery time and reliability of global players including managing global outsourcing and information technology, infrastructure and facilities to support transportation system and cargo operations.

When considering major players in global supply chain, traditional model is not sufficient to respond to dynamic environments. Traditional model in exporting country consists of exporter, freight forwarder, inland container depot, transporter, warehouse, port or air port. On the other hand, importing country covers port or air port, customer broker, freight forwarder, distributor, wholesaler, retailer and importer. However, a new model would be created with more shorter and leaner. Members of a global supply chain would be less than competitors and work professionally.

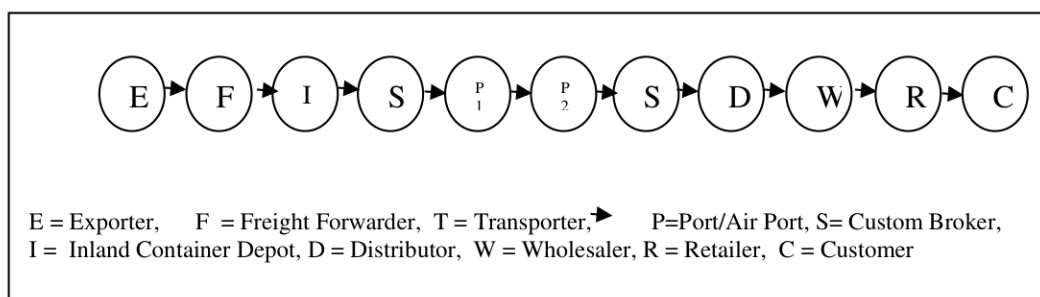


Figure 1 Traditional model of international logistics and supply chain

Figure 1 shows traditional model of international supply chain. Traditionally, exporters deliver their products through intermediates until arrival to importers. The processes took several weeks with many problems and barriers. The barriers include tariff and non-tariff measures. As tariff measures have been decreasing due to opening of trade liberalization and economic cooperation, but non-tariff measures are becoming serious issues for players. They increase long lead time with higher total costs through global supply chain.

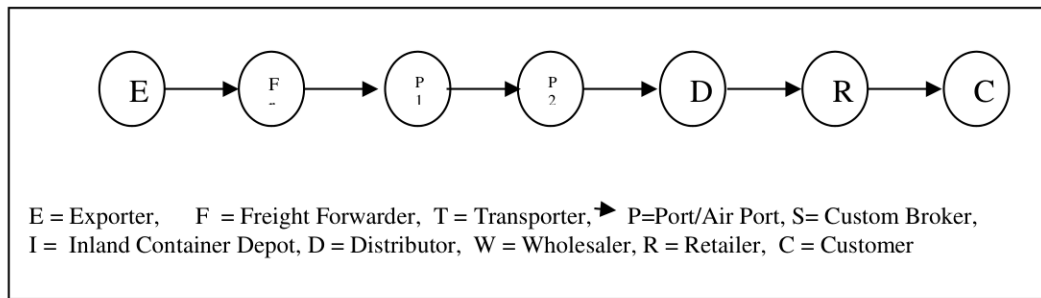


Figure 2 Modified model of global supply chain

Figure 2 shows modified model of global supply chain. To respond to dynamic changing, members become professional and manageable players. In this model, exporters can outsource professional freight forwarding company who can deliver a product with shorter chain and wide-network to importer. Inventory would be stocked at distributor before delivering to customers. As transporter and information technology (IT) professionals will link supply chain members through physically and electronically. Achievement of time and cost advantage, responsiveness and flexibility would be a major objective of the model.

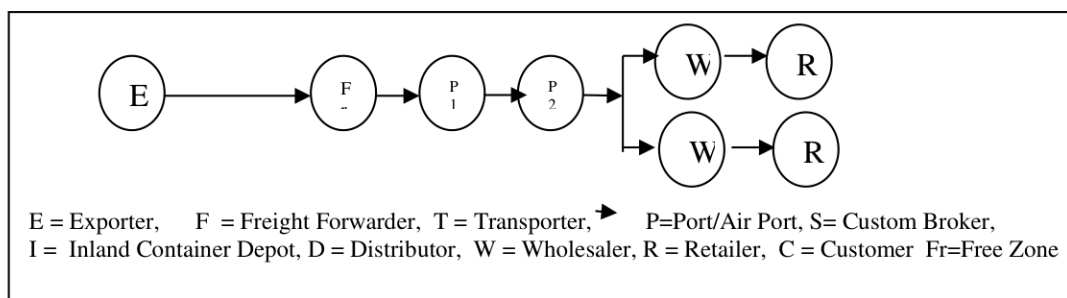


Figure 3 Alternative model of global supply chain

Figure 3 Alternative model of global supply chain. In this model, export side, especially freight forwarding companies need to be a professional player. They have accurate demand forecast and hold inventory to import side. Inventory will be stocked at freight forwarding companies and delivering to wholesalers and customers. As modern transporter and information technology (IT) professionals would be a critical success factor. Also achievement of cost advantage, responsiveness and flexibility would be a main purpose.

Outsourcing management is a new way of managing global logistics and supply chain. Cost and time management would be a pressured drive to firms. The firms identified that they are interested to hire external transporters or warehouses. Many firms are worried the issue of coordination and controlling to outsourcing companies. The firms state that effectively working with members in global supply chain, it needs to understand culture and value of partner countries. Understanding culture and values of partners build closer and positive relationship among members. Under trade liberalization and economic cooperation between Thailand and other countries, tariff barriers are reduced or eliminated. However, non-tariff barriers are becoming serious and complex problems. Operating in global supply chain, cost, responsiveness and flexibility are critical success factor. Members would design and develop their effective supply mapping with more shorter and leaner. To achieve the global objectives, lower costs with high responsive and flexibility would be a desired output.

## **Conclusion**

The study concludes that players would change their new and innovative way of conducting global business in a new direction and system thinking, consistent with dynamic changing of world trade and investment. The contemporary issues in managing global logistics would be trained to firms in topics of how to manage complexity of import-export documentation, costs reduction of operations and

managing uncertainty of delivery time and reliability to global players, in particular managing global outsourcing and applying information technology to global trade activities.

The result concludes that importers and exporters need to learn more on aspect of global knowledge and flexibility to changing global trade. They cannot operate their business in old way. Under current government policy which accelerates to open trade liberalization to partner countries. As a result, then tariff barriers would be reduced or eliminated, but non-tariff barriers (i.e. charging other fees and custom procedure and evaluation are increasingly becoming future problematic issues for global trade in term of cost and time management. Therefore, importers and exporters are confronting to serious barriers when trading with partners. Even though tariff rate has been annually decreasing until zero percent, but non-tariff barriers (TBT, SPS, national treatment, and standards) are increasingly becoming big problems. Players, in particular Thai side, need to be more professional in term of global knowledge and understanding, including readiness to adapt and flex to changes. New global chain would be shorter and leaner in term of total costs and time.

The study leads to a conclusion that before managing global logistics and supply chain, it needs to examine status of global players, including identifying current and future problematic issues associated with changing trade patterns and future policy making of partner countries. Then defining a framework and developing a new model. Further research would be conducted by focusing on changing role and responsibility of specific logistics activities (i.e. freight forwarding, customs broker, ICD/CFS, Shipping lines and ports).

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