

CHAPTER 7: MANAGING MULTIMODAL TRANSPORT CORRIDORS IN SOUTH EAST ASIA

7.1 INTRODUCTION

Supply chain management is seen as the logistics discipline of the 1990s (Taylor, 1998). The logistics costs associated with the distribution of any product can account for a high proportion of its sale price. There is therefore, potentially, considerable scope for efficiency gains that will reduce costs, which in turn will be reflected in the price of a given product. This reduction cannot be implemented without complete control over the supply chain.

Supply chain management is an integrative approach for planning and controlling the material flow from suppliers to end-users (Carter & Ferrin, 1995). It is used as a technique to create and maintain a firm's competitive advantage. The management of multimodal transport corridors along the supply chain is important to ensure that customers demands are met, as well as preventing excess in stocks that may lead to high holding costs or losses through obsolescence. One of the goals of supply chain management is to meet customer service objectives while simultaneously minimising transport, inventory, and other associated costs.

These customer service objectives are rarely fully met because of the individual behaviour of decision-makers in firms along the supply chain, as their behaviour is neither optimal nor rational (Parnaby, 1979). Due to the dynamic nature of the supply chain, amplifications and fluctuations occur, from suppliers all the way down the chain. What is needed is a robust control system that is flexible enough to counteract any disturbances along the supply chain.

Logistics and supply chain management are seen as the field in which freight forwarders, by virtue of their particular expertise, are able to offer the most added value to transactions in the freight trade (Bugden, 1999). Freight forwarders, as 'transport service facilitators', will be playing an important role in supply chain

management as an increasing number of firms outsource their logistics function (UNCTAD, 1998). These freight forwarders, acting as third party logistics providers, are now becoming more involved in the design, management, and control of firms' supply chains¹.

The purpose of this chapter is to examine the changing role of freight forwarders, from forwarding agent to multimodal transport operators, to logistics service providers or supply chain managers. According to Karandawala (1999), regional freight forwarders are the best equipped to manage multimodal transport corridors in South East Asia. A Logistics decision-making model is introduced to represent the possible 'thought' process that a freight forwarder may use when selecting routes and modal combinations.

The possible role of large third party logistics providers (3PLs) or operators' consortia in managing multimodal transport corridors in South East Asia are not examined in this chapter. This is because of the discrepancy in the level of basic infrastructure and economic development in the countries studied. There are no 3PLs or operators' consortia operating in Cambodia, Lao PDR, Myanmar and Vietnam. Some companies claim to offer full logistics and supply chain services but in reality they are only offering forwarding services (not even multimodal transport services). Large 3PLs are relative newcomers in Malaysia and Thailand while they are much more established in Singapore. It will take some time before large 3PLs are fully operational in the region. The author fully acknowledges that large 3PLs or operators' consortia are fully capable of managing multimodal transport corridors but not in South East Asia at the present moment.

¹ "Managing the Supply Chain", in: *Lloyd's Shipping Economist*, October 1998, pp. 8-9.

7.2 THE FREIGHT FORWARDER

7.2.1 Definition

According to the United Nations (1992), there is no internationally accepted definition of the term “freight forwarder”. Forwarders are known by different names in different countries, such as “customs house agent”, “clearing agent”, “custom brokers” or “shipping & forwarding agent”. Originally, freight forwarders were commission agents performing on behalf of the exporter or the importer routine task such as loading/unloading of goods, storage of goods, arranging local transport, obtaining payment for his customer, etc. Bugden (1999) described that the task of a freight forwarder is to facilitate trade to the extent that the trader need only produce and sell the goods (or to order the goods in case of imports). Once this has been done the forwarder can take over and provide every subsequent function from factory gate to the final delivery.

7.2.2 The changing role of freight forwarders

The role of freight forwarders in the international supply chain has become more important in recent years as they have expanded and diversified their operations worldwide. Initially, freight forwarders were just agents for their customers without any control over their clients’ supply chain (TIFFA, 1993). The advent of containerisation and information technology has led them to increase their responsibility toward supply chain management (TIFFA, 1999). According to Forsyth (1999), shippers and consignees expectations have now exceeded the traditional services offered by freight forwarders (see Table 7.1). It has become the freight forwarders’ duty to improve the efficiency of their clients’ logistics functions and to make their supply chain competitive (Banomyong *et al*, 1999). This is done by providing the link to the next segment in the supply chain. As the distance between the manufacturer (i.e. the exporter) and the distributor or retailer is often quite considerable (and vice-versa for imports), there will usually be problems in both the material and information flows.

Table 7.1: Traditional freight forwarders’ activities

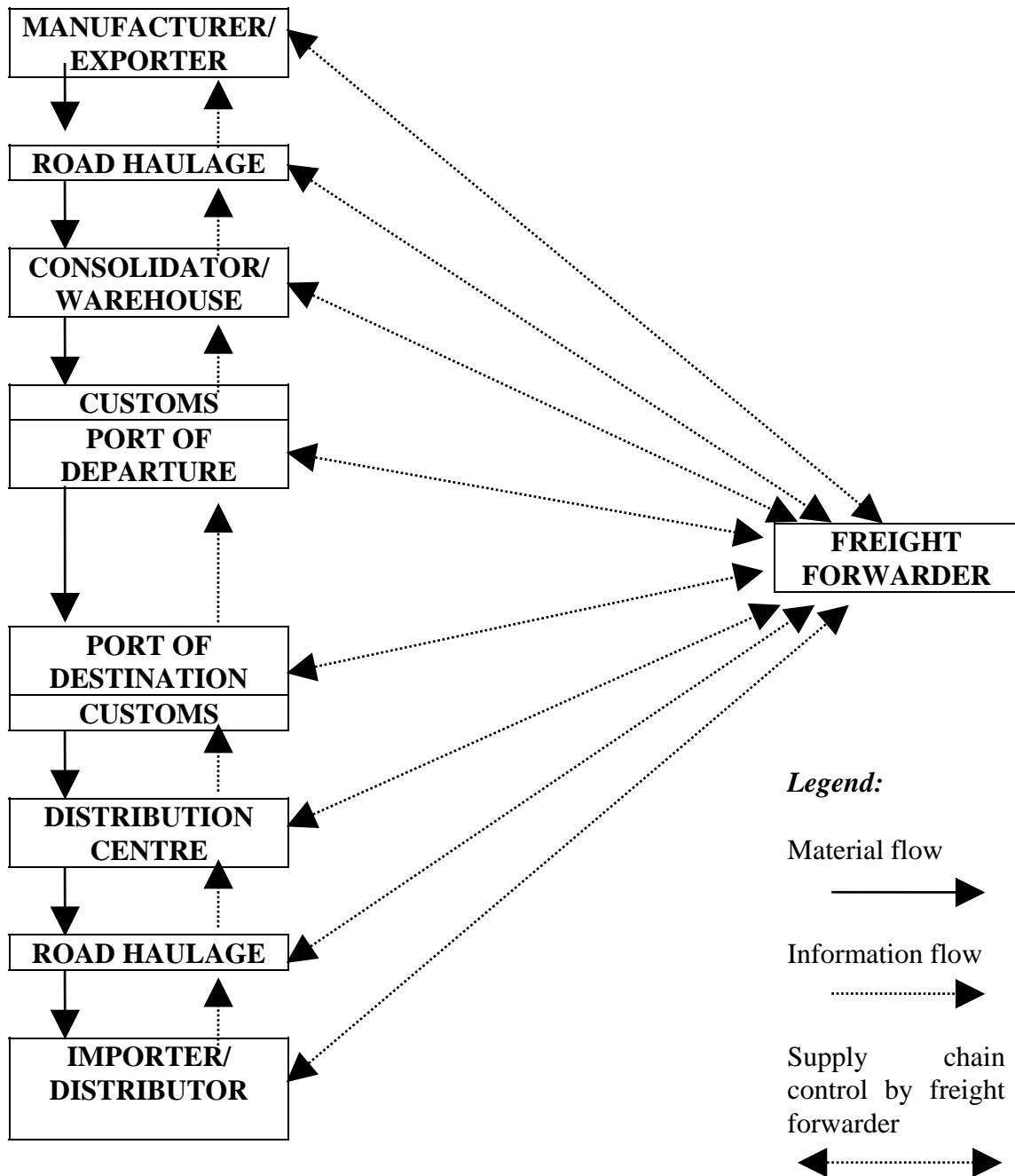
• Advise customers on most appropriate mode of transport.
• Choice of the most suitable carrier and conclusion of the transport contract.
• Organisation of “groupage” or consolidation.
• Provisions of carriers’ and forwarders’ documentation.
• Compliance with regulations and letter of credit requirements.
• Customs clearance.
• Advise customers on packing.
• Insurance cover during transit.
• Advise customers on warehousing and distribution.
• Supervision of the movement of goods.

Source: Banomyong (1999b)

The manufacturer has to respond as quickly as possible to the various requirements within the specified time frame. If he cannot, the multinational enterprise (MNE) will probably choose another supplier. This creates a number of problems for the manufacturers, as not only do they have to manufacture the goods on time, they also need to deliver them on time (Bruisma *et al.*, 2000). The problem of delivering the goods on time is a very crucial one when many MNEs are using just-in-time (JIT) management techniques.

The selection of the appropriate forwarder is critical to the supply chain competitiveness (Hensher & Chow, 1999). Forwarders can play a pivotal role in designing and providing an integrated supply chain that will respond to their clients’ needs. In order to help their customers, forwarders should behave more like a partner to their clients. Not only does the forwarder have to arrange for the transport of cargo and facilitating its clearance through customs but he will also need to manage his clients’ order process. This means that the forwarder will actually be involved not only in lowering clients’ costs by reducing waste in ordering operations, but also in integrating his client’s supply chain. The strategy is to make the partnership so tight and seamless that the logistical services provided becomes part of the clients’ own business. Figure 7.1 illustrates how freight forwarders may control a supply chain.

Figure 7.1: Role of freight forwarder in a supply chain



Source: The Author

The forwarder's main role is to organise the supply chain so that the goods will arrive on time but on many occasions, because of limited resources and various operational constraints, forwarders are not able to deliver and are thus rendering their clients' less competitive.

Limited resources and operational constraints are not unique to freight forwarders' operations in developing countries. In each region or country in the world, various resource limitations and operational constraints exist. It is the duty of the forwarder to make the best use of his resources within the physical and non-physical framework of that region or country.

7.2.3 Supply chain management by freight forwarders: emergency channels

According to Alan Harrison², the freight forwarder sees its function in the supply chain as that of a distributor. Their main role is to move the goods from one end of the supply chain to another within the constraints imposed by their clients and the commercial environment.

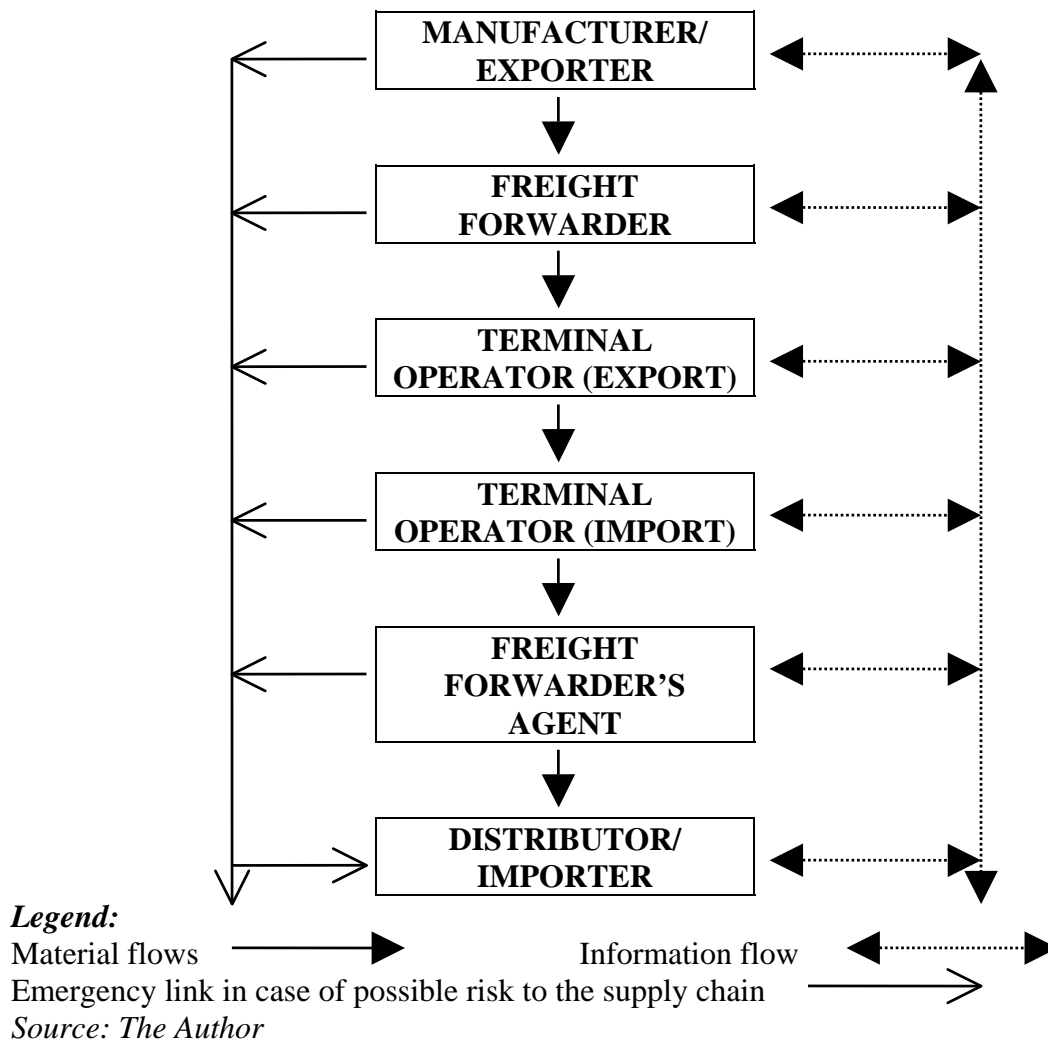
A situation of 'Customer Panic' occurs when the client is faced with a difficult situation in his supply chain (mostly stock-outs) and is unable to rectify the situation. When a break in the supply chain occurs or is going to occur, there is a very strong risk that the whole supply chain will be immobilised, generally for a longer period than it took the break to occur (Hong-Minh *et al.*, 2000). The analogy may be drawn with traffic jams along the motorway. Typically it may take three times longer for traffic jams to clear than it takes to build up.

² General Manager of Airlink Cargo Services (Europe) Ltd.

When all the players in the supply chain are rendered non-operational, costs increase massively and major penalties are incurred. There is no choice left for all of the players involved, as they must be able to find someone who is able to solve the problem of immobilisation in the supply chain. That is the freight forwarders' responsibility; as they must be able to find solutions to the problem no matter the costs involved. This can be done through the freight forwarders' network of overseas agents to monitor foreign manufacturers, so as to be able to have complete control over their clients' supply chains. Some freight forwarders may even act as a buffer by creating an emergency network, so that the goods will arrive on time, as requested. The role of an 'emergency channel' is to minimise the effect of interruptions along supply chains (Jennings *et al.*, 2000).

The only prerequisite for the freight forwarder to be able to activate this 'emergency channel' is for the freight forwarder, or a member of his network, to have the goods physically in his possession (see Figure 7.2).

Figure 7.2: Freight forwarders' emergency channel



If the goods are not in the freight forwarder's or his agent's possession, then it is almost impossible to find a solution. When the goods are "in their hands", a solution is feasible and can be worked out at the most reasonable cost to the client. The freight forwarder role is not only to organise the supply chain but also to service it. A freight forwarder can be described as an 'engineer' or 'architect' of the supply chain. This leads to a mixture of proactive and reactive measures. Proactive in the sense that a forwarder must try to forecast what types of services the client will want for the future and reactive because the forwarder is always faced with the unexpected.

The freight forwarder cannot be successful on his own; he has to rely not only on his agency network and sub-contractors but also on his clients. A close partnership has to be formed between the freight forwarder and the client. This in turn will facilitate the creation of more realistic supply chain designs and modes of operation

7.2.4 Freight Forwarding in South East Asia

Freight forwarders in developed countries provide extensive logistical and supply chain management services. These services go beyond multimodal transport and cater to the needs of exporters and importers in managing all the transport requirements from the point of origin of the raw material, through the manufacturing process and the delivery to the final consumer. This is because customers require that services offered by freight forwarders provide value-added to their goods and make the customers themselves more competitive (Banomyong, 1999b). In contrast, freight forwarders in developing countries are faced with many physical and non-physical barriers, such as inadequate banking practices, documentation and insurance, in order to be able to provide full multimodal transport and logistical services.

Progress in the availability and development of multimodal transport services and supply chain management expertise varies widely across countries in the Asian region (ESCAP, 1995f & 1996d). Within ASEAN, the development of multimodal transport and logistics services reflect the economic development achieved by the individual countries. In countries such as Malaysia, Philippines, Singapore and Thailand, freight forwarders are able to provide complete multimodal transport operations as well as varying levels of logistics services, while in countries such as Cambodia, Lao PDR and Myanmar the freight forwarding industry is still in its infancy (Karandawala, 1999).

Apart from Brunei, Cambodia and Lao PDR, all the countries in the region have established national forwarders' associations to improve and standardise the level of services offered by forwarders in their respective countries. In 1991, the ASEAN

Federation of Forwarders Association (AFFA) was formed to pursue all measures to improve the quality, standard, and professionalism of freight forwarders as well as to assist and support the establishment of other national forwarders association in the other countries of the ASEAN region (TIFFA, 1998). Here below is the status of the freight forwarding industry in the countries involved in this research:

- **Cambodia**

There is no official status for the freight forwarding industry in Cambodia, no national forwarders' association as well as no *standard trading conditions*³. A number of local transport and shipping companies are offering forwarding services in competition with the more established foreign forwarders. An attempt is being made by local forwarders to establish a national forwarding association with the first meeting being held on the 26th of October 2000. In Cambodia, documentation remains a major obstacle to import and export procedures with too many un-necessary formalities, and among the forwarders themselves; there is no uniformity in their transport documents thus creating problems for transport procedures and customs clearance⁴. When forwarding services are offered in Cambodia, the local freight forwarder is only capable of acting as an “*agent*⁵” for his client as liability insurance cover is impossible to obtain in order to assume liability. Insurance practises in Cambodia are still very poor. Only foreign forwarders are able to assume the role of a “*principal*⁶” when providing multimodal transport and other logistical services.

³ Standard trading conditions clearly define the role, responsibility, and liability aspect of freight forwarders.

⁴ The freight forwarder will have to follow new customs procedures every time a custom official team is replaced.

⁵ Forwarders when acting, as **agent** does not accept liability for acts or omissions of third parties.

⁶ As a principal, the forwarder is an independent contractor who assumes responsibility **in his own name** for providing the services required by his client. He becomes liable for the acts and omissions of sub-contractors whom he engages for the performance of the contract.

- **Lao PDR**

Freight forwarding is quite new to Lao PDR as reflected by the fact that there are around only 20 registered and licensed companies engaged in the freight forwarding business, although there are many small operators that are not registered and licensed which are engaged in customs clearance or dealing directly with Thai transport companies. A national forwarder association, Lao International Freight Forwarders Association (LIFFA) is currently being set up with the help of the Lao Ministry of Transport. The Lao standard trading conditions are currently being drafted. Problems encountered by local forwarding companies include among other things, restricted transit cargo rights, old equipment, poor human resources and non-acceptance by banks of freight forwarders transport documents (or receipts). Lao traders must wait until the goods are loaded at the port of departure (Bangkok, Laem Chabang, Danang) to collect the marine bill of lading needed for documentary credit purposes⁷. Some large local forwarders offer multimodal transport and logistical services as “*principal*” such as Lao Freight Forwarder (LFF) and Societe Mixte de Transport (SMT) but the majority of Lao forwarders usually act as “*agent*”.

- **Malaysia**

The Federation of Malaysian Freight Forwarder (FMFF) is the national umbrella body for the three state associations from Penang in the North, Port Klang in the central region and Johor Bahru in the South (ESCAP, 1995). Malaysian freight forwarders through their national association have been issuing their own FIATA⁸ forwarders' bill of lading, which is based on the UN Multimodal transport convention (1980) and has been accepted by the International Chamber of Commerce (ICC). The majority of large forwarders operating in Malaysia are able to offer full logistics and supply chain management services.

- **Myanmar**

⁷ Shipping line agents in Lao PDR do not issue bill of lading.

Freight forwarding is considered a new business activity in Myanmar but with the support of the Myanmar Ministry of Transport freight forwarding has been included into the Myanmar Economic Policy for promotion but Customs still do not accept forwarders' bill of lading or house bill of lading (HB/L) for clearance purposes. Only the real consignee or the real shipper can clear Customs.

Myanmar International Freight Forwarder Association (MIFFA) was set up in November 1999 with a standard trading condition “borrowed” from the FIATA model rules, as MIFFA is not yet a member of FIATA. The establishment of the national association is an important step in improving the scope and the standard of services offered by local freight forwarders. Presently, most of the local forwarders act as “*agent*” when offering their services.

- **Singapore**

The Singapore Freight Forwarder Association (SFFA) was established in 1973 with the objective of upgrading the reliability, integrity and standards in freight forwarding practices and management in Singapore. Presently, the majority of forwarders in Singapore are able to offer logistics and supply chain management services. The Association is also a member of FIATA, AFFA and the International Multimodal Transport Association (IMTA). Members offering multimodal transport services as “*principal*” are required to register themselves with the SFFA Register for Multimodal Transport Operators that was established on the 6 of April 1995. The Association was renamed Singapore Logistics Association on 30 August 1999.

⁸ Federation Internationale des Associations de Transitaires et Assimilees.

- **Vietnam**

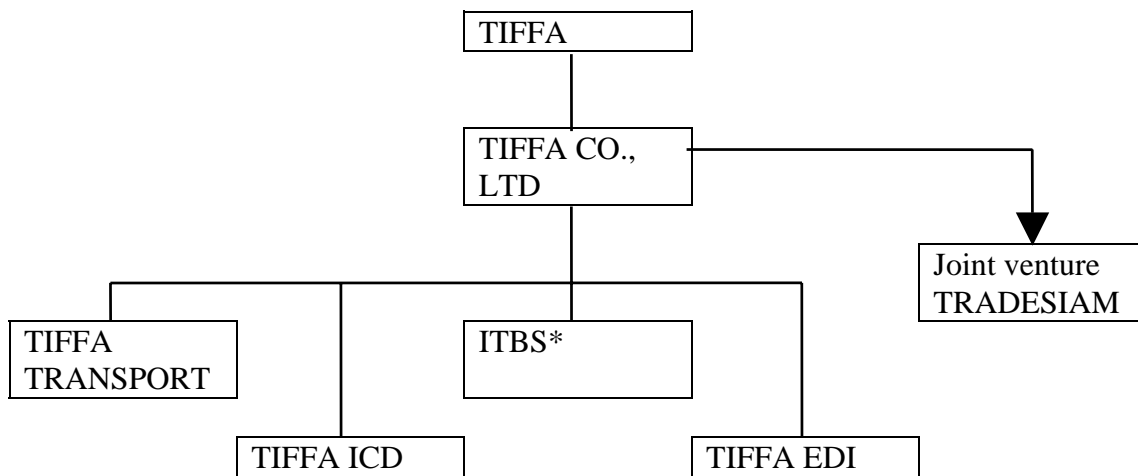
The Vietnam International Freight Forwarders Association (VIFFAS) was formally founded in 1995 to upgrade the quality of local forwarders to international standards. The Association has now more than 40 members and is now a member of AFFA and FIATA⁹. Forwarders in Vietnam are all state controlled entities and foreign forwarders wanting to establish a presence in Vietnam can only set up a representative office. In order to operate, the foreign forwarder must nominate a local agent to handle its cargo and issue transport documents. It is not uncommon for a Vietnamese forwarder to be an agent for a number of different shipping lines and foreign forwarders. The majority of Vietnamese forwarder offer their services as *'agent'* with a few of the larger one offering complete multimodal transport service with the issuance of the FIATA multimodal transport bill of lading. National liability insurance is offered to VIFFAS members through Bao Minh Insurers, in Ho Chi Minh City but international liability coverage, such as TT club coverage, is still unavailable.

- **Thailand**

On March 10, 1987, the Thai International Freight Forwarder Association (TIFFA) was formally registered. The situation in Thailand is unique to the region and needs to be examined in detail as the national forwarders association has *"corporatised"* itself in order to provide logistical services to its members. The reasoning behind this was because many of TIFFA's members felt that there was a need to offer a better control of clients' supply chains and to protect themselves from the uncertainties of the freight market. The members of the association decided to set up a private limited holding company. The purpose of the company is to help its members to better control the supply chain, through strategic investment in various logistics-related ventures, in order to offer the highest quality services possible to their clients (see Figure 7.3).

⁹ According to Mr. Pham Trong Hoai, Chairman of VIFFAS.

Figure 7.3: Organisation Chart of the TIFFA Group



* ITBS: International Transport & Business School
 Source: TIFFA

TIFFA Inland Clearance Depot (ICD)

The first aim of the TIFFA Company was to gain a concession to operate an Inland Clearance Depot (ICD) from the State Railways of Thailand (SRT) at Lad Krabang. The reason was because the Port Authorities of Thailand (PAT) have forbidden access of freight forwarders in, all but one of the marshalling yard in Bangkok Port. This left them with no place to consolidate or stuff containers for their clients. It was a big problem, especially for smaller freight forwarders who did not have access to their own private warehouse. This policy has resulted in the overcrowding of the only available marshalling yard in Bangkok Port.

Lad Krabang is located on the outskirts of Bangkok and offers block train services to the deep-sea port of Laem Chabang in Thailand and Port Klang in Malaysia. The ICDs at Lad Krabang were created to help relieve traffic congestion around Bangkok Port and also to deal with the port’s problem of over-utilisation¹⁰. The Lad Krabang ICDs complex is consistent with the Thai Government policy to shift cargo from Bangkok Port to Laem Chabang. The ICDs serve as a warehouse, marshalling yard, and consolidating location for all its members at a reduced privilege rate (Wiegman

¹⁰ The heavy traffic congestion in Bangkok has led to the implementation of a “truck curfew”, which affects the smooth operation of intermodal transfer from land to sea and vice versa. Trucks are forbidden on Bangkok’s road between 6 to 10 am and 4 to 10 pm.

et al., 1999). Customs clearance is also being done on the premises (Beresford & Dubey, 1990). With more than a hundred members' companies, this ICD acts as a buffer and help in coping with the surges in demand for transport service, as this facility will operate on a 24h basis.

Even if the TIFFFA ICD capacity is filled, the Lad Krabang Complex also offers 5 more privately owned ICDs. Exporters, importers and forwarders will not have to worry about finding or securing subcontractors for packaging, consolidating and haulage to and from Laem Chabang or Port Klang where the main shipping lines operate (Jourquin *et al.*, 1999). In spring 1998, TIFFFA won the concession to operate the Lad Krabang ICD for a period of 10 years.

TIFFFA Transport: Road Haulage Services

Another purpose of the TIFFFA Company is to operate a fleet of licensed trucks to serve their members when transporting customers' goods. In 1997, TIFFFA has received the licence to transport goods in and out of Bangkok Port under the name of 'TIFFFA Transport'. This licence is only given to companies with a minimum of 10 million baht¹¹ paid up capital and a fleet of at least 100 trucks. With this licensed truck fleet, TIFFFA's members do not have to bid or compete among themselves to secure the services of licensed trucking companies. They also do not have to invest in long term trucking contracts, as the trucks are made available to members on a priority basis and at competitive rates. If the truck fleet is not sufficient, then it will be the duty of TIFFFA to broker-in additional capacity. The 'TIFFFA Transport' fleet was constituted by pooling the resources of TIFFFA's members who operated road haulage services.

¹¹ 1 USD is roughly equivalent to 38 baht.

TradeSiam

A third purpose of the TIFFFA Company is to control the information flow between their clients and themselves. This has been done by:

1. Becoming a shareholder in TradeSiam, the national Electronic Data Interchange (EDI) service provider, as they have been able to influence trading methods, procedures, and policy concerning electronic commerce and EDI in Thailand. Presently the company holds 6% of the shares. TradeSiam is a joint venture between certain governmental agencies and private sector investors (see Table 7.2). As the sole authorised national EDI service provider, TradeSiam will provide services such as validation, split billing, security, and audit trails and message logs to satisfy legal requirements. This will enable TIFFFA's members to benefit from EDI technology facilitating the continuous flow of information not only between the forwarder and his client but also to all related parties in Thailand concerned with international trade such as the Customs Department, the PAT, banks¹², insurance companies, carriers and so on (see Figure 7.4).
2. Setting up TIFFFA EDI Co. Ltd., a Value Added Network (VAN) provider with the purpose of implementing EDI at TIFFFA ICD in Lad Krabang, in conjunction with TradeSiam.

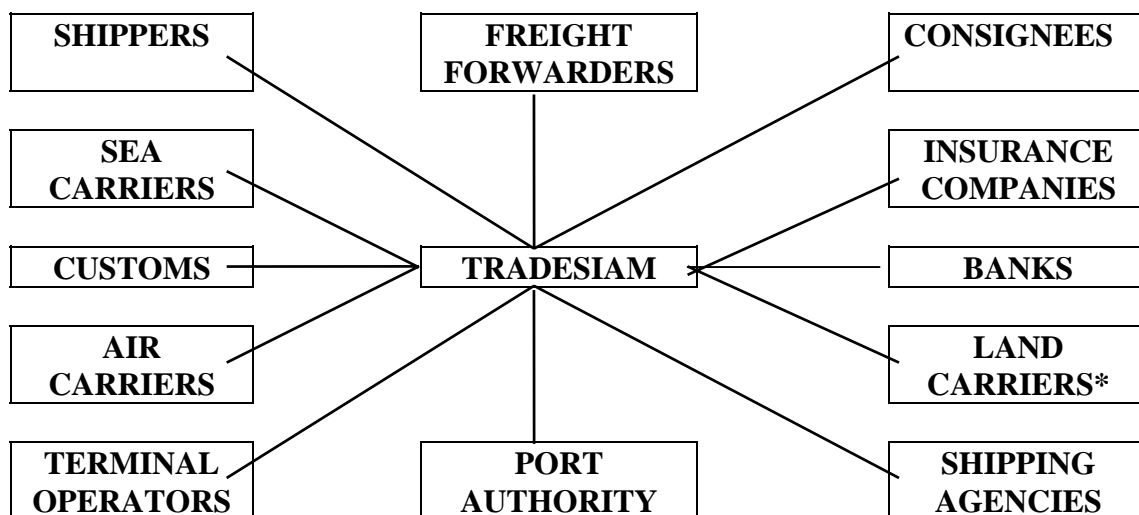
¹² "GE helps banks with EDI system", in: *Bangkok Post*, 2 November 2000, Internet Edition.

Table 7.2: Share-holding structure of TradeSiam

The Ministry of Finance	12%
The Ministry of Transport	12%
The Ministry of Commerce	12%
The Ministry of Science, Technology & Environment	13%
The Crown Property Bureau	6%
Thai International Freight Forwarders Association (TIFFA)	6%
Bangkok's Ship owner Association	6%
The Federation of Thai Industries	7%
The Thai Chamber of Commerce	7%
The Thai banker Association	8%
The Thai Insurance Association	5%
TOTAL	100%

Source: Banomyong (1997)

Figure 7.4: TradeSiam information network



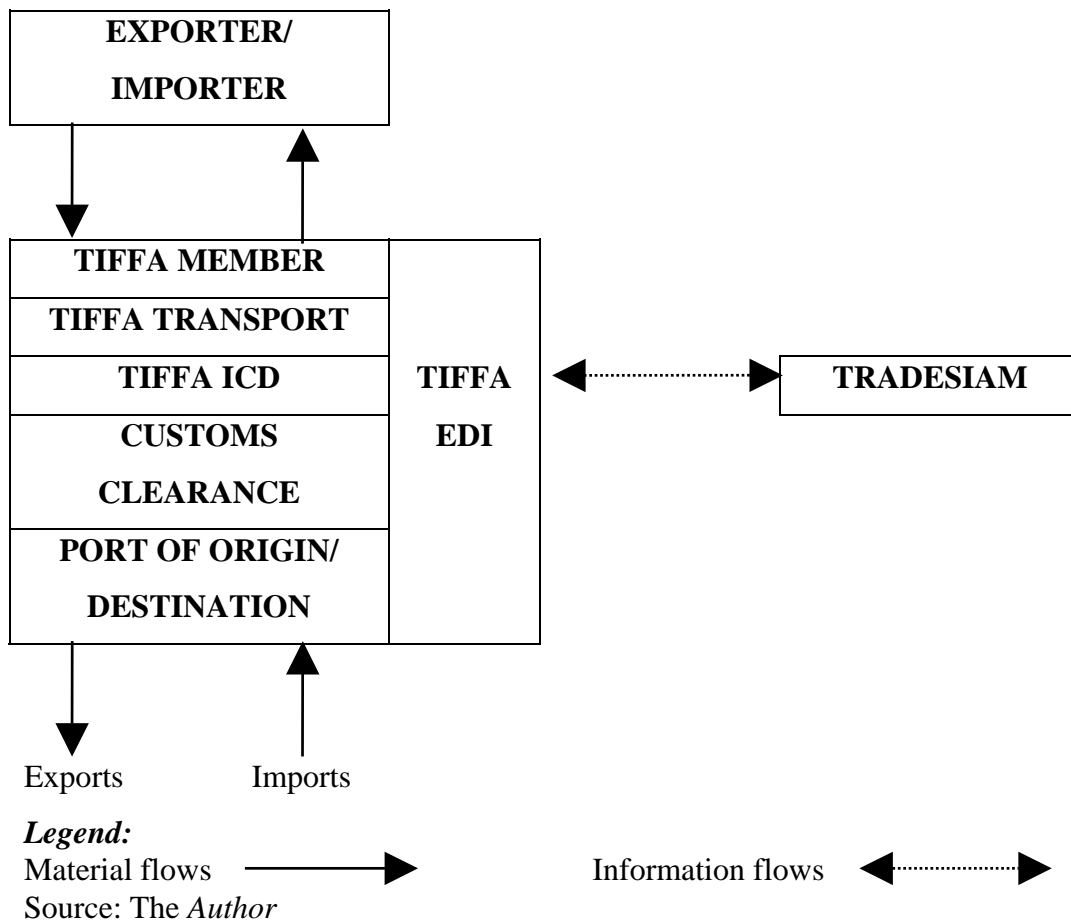
* Railways, road hauliers, etc.

Source: The Author

Integration of transport and other logistics services give TIFFA a better control over clients' supply chains. This vertical integration is not a rigid one as the members are able to contract-in if the company's services are not fully competitive. Nevertheless, by integrating the supply chain, TIFFA is able to fulfil members' demand at the most competitive price. This demand is, of course, derived from the members' own clients demand which in turn is subject to the buyer's demand. TIFFA's members are able to

control not only the information flow, through TradeSiam, but also at the same time the material flow, through their own facilities at Lad Krabang ICD (see Figure 7.5).

Figure 7.5: TIFFA integrated supply chain network



Forwarders in South East Asia are currently discussing areas where possible regional co-operation can be made, in order to upgrade and harmonise forwarding practices and multimodal transport in the region. This will hopefully facilitate integrated logistics services and supply chain management in the region.

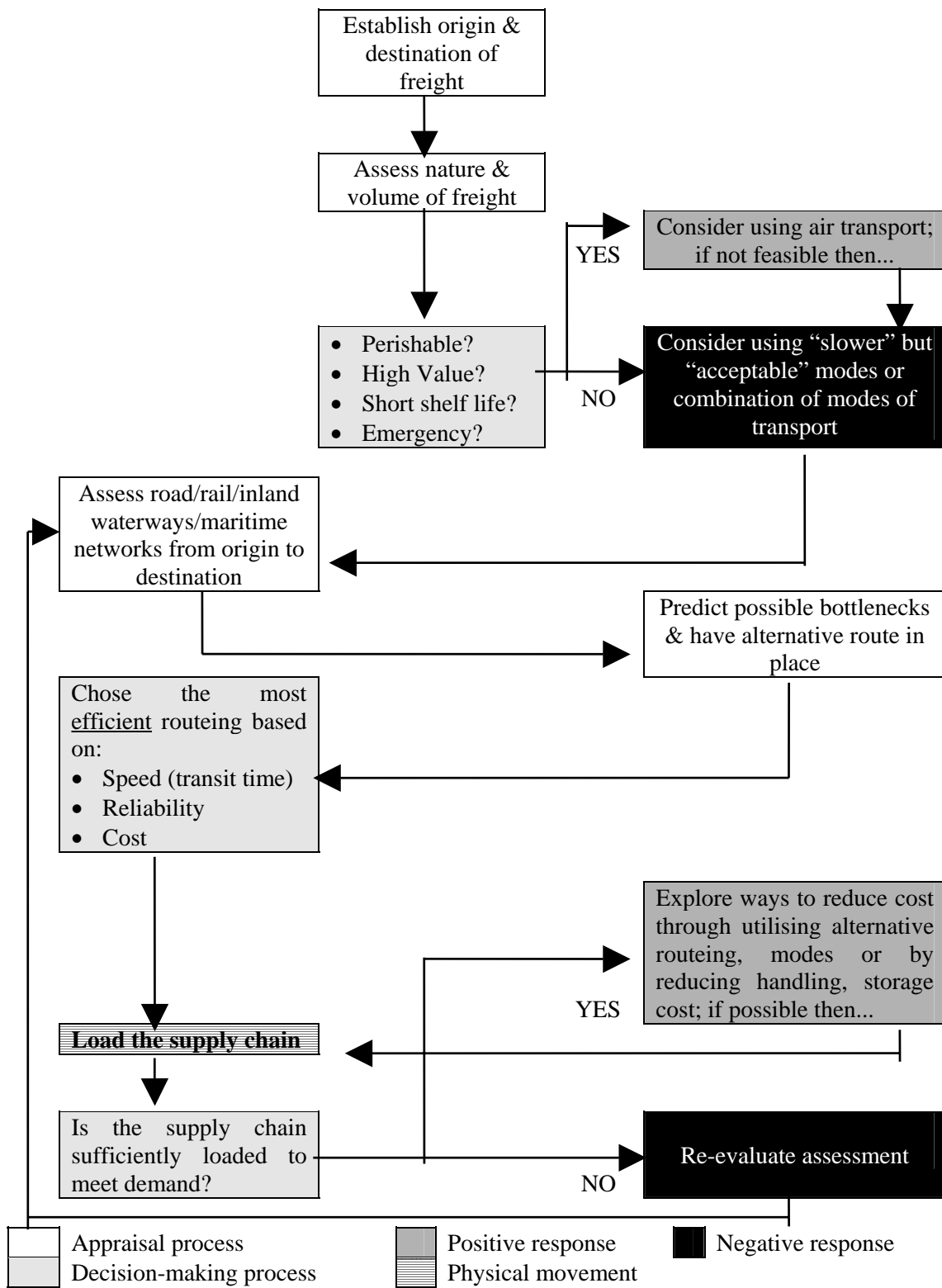
7.3 SUGGESTED FREIGHT FORWARDER'S LOGISTICS DECISION-MAKING MODEL IN SOUTH EAST ASIA

Logistics and supply chain management, as a discipline, is not fully developed in South East Asia. Nonetheless, the main functions of logistics are available in the region such as purchasing, production, distribution, warehousing, inventory and information but the emphasis is generally on transportation or distribution issues. This is why the focus of the proposed logistics decision-making model is on routeing and modal selection.

Freight forwarders' decision-making process is complicated, as the logistics processes involved in transporting and distributing freight are extremely complex with consignments being, usually, split, consolidated and split again prior to arrival at the destination site. Although each consignment is unique in its characteristics, many consignments exhibit some similar logistical elements. These elements allow the freight forwarder to follow a structured response pattern when dealing with freight movement from door-to-door. This response pattern is illustrated in a proposed logistics decision-making model for routeing selection (see Figure 7.6).

The model does illustrate some of the key difficulties that can arise when moving freight and the possible thought process that a freight forwarder may use. Once the supply chain is established, one of the forwarder's main on-going tasks is to manage the flow of consignments in a constantly changing environment.

Figure 7.6: Logistics decision-making model for routing selection



According to Vidal and Goerschalcckx (2000), there is no generally accepted method by researchers, managers and freight forwarders for designing competitive supply chains even when there are a number of academic research teams and consultancy firms who believe that they have developed widely applicable supply chain models.

In order to establish an efficient multimodal transport corridor, the forwarder must first establish the origin and the final destination of freight to be handled. This will give the forwarder a preliminary idea of the routeing decision. An assessment about the nature and volume of freight will also need to be done. Freight characteristics such as perishability, value-density, product shelf life, weight, distance or even 'emergency' will ultimately affect routeing and modal selection. Three options are available to the freight forwarder:

1. If freight is perishable, has a short shelf life or in the case of an emergency, the forwarder may decide on the all air option from origin to destination.
2. If freight can withstand marginally longer transit times (i.e. fashion apparels) then partial air transport can be considered. For this option to be successful, the forwarder must identify critical modal and interchange points. As an example, Nepalese garment exporters use an air-sea combination, where their goods are air freighted to Bangkok (Thailand) and transloaded on to sea going vessels.
3. If freight is not dependent on quick transit time then the surface option will be selected.

If option 2 or 3 is chosen, the forwarder must continue his 'thought' process in evaluating the possible combination of transport modes available for that particular route. The assessment of transport modes and nodal links from origin to destination will enable the forwarder to appraise the feasibility of the routeing. An appraisal of the various physical attributes and regulations of the destination country and, in the case of land-locked nations, the neighbouring transit countries must also be conducted. If sea transport is the main mode of transport, a suitable port of origin and port of destination needs to be chosen. This decision of port selection will depend largely on handling, storage and efficiency of the ports in question. The inland

infrastructure needs to be considered and assessed as well as terrain topology and the seasonal fluctuation of weather. All of these factors will have an influence in the choice of route and mode by which freight will be transported.

Once modal interchange points (i.e. ports, airports, ICD), routeing selection and choice of distribution centres have been established and selected, the forwarder will then have to predict the possible complication in the multimodal transport corridor chosen in order to have alternative routeing in place. Routeing selection will also be based on speed (transit time), reliability and cost.

When the routeing decision is made, the forwarder will load the multimodal transport corridor. If the multimodal transport corridor is sufficiently loaded, the forwarder will then explore ways to reduce cost. This can be done by using alternative routeing, transport modes or by reducing handling and storage cost. If improvement is possible, the forwarder will make the necessary adjustment to increase the efficiency of the multimodal transport corridor. But, if the operation of the multimodal transport corridor is subject to difficulty, the forwarder will have to re-assess the transport modes and nodal links utilised on that particular route.

The movement of freight along the logistics channels is far more complex than any model can display but the proposed logistics decision-making model can help illustrate areas where problems may arise and how to solve them. The management of multimodal transport corridors within global supply chains is an on-going process. This proposed logistics decision-making model attempts to offer an insight on route and modal selection processes that can be made by freight forwarders.

7.4 CONCLUSION

In South East Asia, supply chain control processes including production scheduling, shipment of product and inventory maintenance are frequently de-centralised and remote from each other. They usually operate independently and in serial order. Slow feedback from the market place causes scheduled production to over or under manufacture in relation to the actual demand. Another issue in the region is the relatively high cost of logistics which is a by-product of inadequate physical facilities, cumbersome administrative barriers coupled with a legal framework not adapted to modern international business practices (Castro, 1999).

Specialised “middle-men” such as freight forwarders, multimodal transport operators or logistics service providers perform critical value enhancing functions that benefit all the players along the chain and increase the supply chain competitiveness (Kopicki, 1999). This can be done by designing and developing effective supply chains and integrating multiple service suppliers into a seamless distribution system.

It is the duty of the forwarder to be aware of all the options available and to design supply chains flexible enough to cope with unforeseen events. The proposed logistics decision-making model can be used as a tool to help explain forwarders’ planning process when selecting routes and transport modes for clients. This model has never been intended to be perfect as there exist a multitude of other factors that needs to be taken into consideration, nevertheless this model may be utilised as a basic guideline for routeing selection.

Today, freight forwarders are faced with the daunting prospects of balancing cost minimisation with clients’ almost infinitely variable requirements. The outsourcing of logistics functions, and Just-in-Time (JIT) management techniques, have forced forwarders to design more dynamic and efficient supply chains within various operational constraints. However, it is the physical aspect of the supply chain that will ultimately shape supply chain dynamics.

Freight forwarders in countries such as Malaysia, Singapore and Thailand are now servicing global manufacturing supply chains and has been quite progressive in developing multimodal transport systems. They often collaborate with other international transport operators, integrators, and logistics service providers in order to meet the demands of global supply chains. These emerging trends indicate that the establishment of efficient multimodal transport corridors will constitute an essential part of the core of global logistics excellence (UNCTAD, 1998). Freight forwarders in Cambodia, Lao PDR, Myanmar and Vietnam still lack the ability to offer full logistical services. The successful development of basic infrastructure and the adaptation of local commercial practices to international standards with the removal of all unnecessary trade barriers are a precondition to the development of freight forwarding and multimodal transport in these countries.

The challenge for freight forwarders in South East Asia is to identify essential transport infrastructure and networks, as well as appraise all logistics options that will allow freight forwarders to achieve and maintain an active and competitive role in providing logistics services for global supply chains.