

# NETWORK DEVELOPMENT OF LOGISTICS FIRMS

Competitive paper

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## ABSTRACT

Purpose of the paper and literature addressed:

Logistics industry is an important industry and it has been growing constantly due to deregulation, mergers and alliances, and growth of logistics firms. However, little has been written on logistics firms *per se*. The research purpose of this paper is to describe and analyze how three basic types of logistics firms differ in terms of core competence and network development. This paper presents a conceptual model of the logistics firms focusing on three types of networks, which distinguishes different types of logistics firms.

Research Method:

Based on resource-based-view and industrial network approach, a conceptual framework is developed to differentiate logistics firms. Two case studies of logistics firms are used as examples to demonstrate how the framework can be used.

Research findings:

Logistics firms have clear differences in capabilities and network focus. These firms are following different dominating logics which make them developing in different ways and thinking totally different. They are part of the same service supply chain and have to interact with each other.

Main contribution:

This research enhances our understanding of the different logics of logistics firms and their interdependence. Moving into one of the basic type of logistics firms means changing capabilities and network focus, which is costly and difficult. Executives need to understand the different logics of the logistics firms and their interdependence. The conceptual framework can be used as a tool to comprehend different types of logistics firms. It also helps us to analyze related strategic moves.

Key words: network, competence, logistics firms, service supply chain, interaction

## INTRODUCTION

Logistics is growing in importance due to globalization, trade growth, worldwide deregulation of transportation (Lieb and Bentz, 2005; Sheffi, 1990). Many firms outsource logistics services to logistics firms in order to focus on core business and enjoy cost reduction, capital reduction and better flexibility (Sink and Langley, 1997; Bhatnagar and Viswanatham, 2000; Wilding and Juriado, 2004). Logistics industry has been growing constantly due to growth of logistics firms and mergers and acquisition in the market (Rushton and Walker, 2009). Some of the logistics firms are even among the biggest ones in the world today. However, even though the logistics firms play an important role, researchers and practitioners seldom focus on them.

Studies of logistics firms and logistics service providers (LSP) have been putting the focus on the service offered, customer demands, skills needed and the degree of integration in their relationships with their customers (Andersson, 1997; Bagchi & Virum, 1998; Berglund, 2000; Knemeyer & Paul, 2004; Lieb & Randall, 1996). However, the existing literature often discuss LSP without differentiating their core competence and how they organize their core business. Meanwhile, according to Hertz and Alfredsson (2003), there has been little interest in the development of LSP.

According to Stefansson (2006), LSP can be categorized into three groups including sub-contract carrier, logistics service provider and logistics service intermediary. However, in reality, a wide range of names are used to denote a LPS and there are confusions of different types of logistics firms in research (Fabbe-Costes et al., 2009). It is argued that different types of LSP have different abilities on how to combine and develop resources. There are different logics behind different types of logistics firms. Logistics firms differ in service capabilities and compete in different market segments. Besides, they obtain and develop different knowledge regarding coordination of different customers. Development of different logistics service providers have different implications and challenges. But executives and even researchers do not fully understand the differences and challenges. Therefore, it is needed to clarify the differences and pinpoint the challenges.

Supply chain management and logistics management literature rarely deals with network and when it does, the network is usually a vertical and hierarchical one defined by a set of connected actors (Jahre and Fabbe-Costes, 2005). Existing literature usually define key supply chain members, such as suppliers, suppliers' suppliers and customers and customers' customers, from a focal actor's perspective (Harland, 1996; Cooper et al., 1997; Mentzer et al., 2001). The focal firm is often a producer or managing a strong brand within the supply chain. The indirect links with third party logistics (TPL) firms are mainly disregarded (Jahre and Fabbe-Costes, 2005). Further, logistics service providers are not regarded as natural partners (Mortensen and Lemoine, 2008). This is mainly due to the fact that logistics services are rather considered to be commodities where costs should be minimized (Potter and Lalwani, 2005).

The concept of logistics management has been evolving for several decades. Recent literature often define logistics management as part of supply chain management. This "unionist" view is widely accepted (Larson and Halldorsson, 2004). In the emerging 'networked era', innovative ways to cooperate and collaborate horizontally (Crujssen et al., 2007; Mason et al., 2007) with partners are forcing the need to reconceptualise the domain and landscape of

logistics and consequently how modern logistics management should be defined (Mason, 2009). Therefore, it is argued that taking logistics service provider as focal firm may contribute to our understanding of logistics management. This research perceives logistics service provider as focal firm and tries to show that there is a logistics service supply chain network.

Essentially, logistics firms are networking firms in the sense that their business idea is based on connecting organizations, coordinating activities and combining resources of different organizations (Hertz and Macquet, 2006). These tasks take place in three different networks: networks of actors, networks of service systems and networks of activities. All logistics service providers are part of these three networks but the focuses for different types of logistics service providers differ. In turn, how they focus on these three networks has distinguished effects on their investments, risks and how they interact with other firms.

By drawing on resource based view and industrial network approach, we want to show that logistics firms have different service capabilities and their core business ideas shift with the network in focus. The research purpose of this paper is to describe and analyze how three basic types of logistics firms differ in terms of core competence and network development. This paper presents a conceptual model of the logistics firms focusing on three types of networks and distinguishing different types of logistics firms. Based on the conceptual model, we will use case studies of different types of firms as examples to illustrate the different categories. We also exemplify through two case studies to show how the framework can be used when one type of logistics firm wants to develop into another type. Implications for firms of the focus are provided in the end.

## **LITERATURE FRAMEWORK**

Scholars usually treat logistics outsourcing as a focal firm in a supply chain outsources its logistics operations to third party logistics firms (Selviaridis and Spring, 2007). This view is probably incomplete. In a recent study, Stefansson and Russell (2008) have identified several supply chain interfaces and shown how these interfaces play a role as buyers, receivers, carriers, logistics service providers and logistics service intermediates all work together to achieve efficient supply chain management. Stefansson (2006) promotes essentially three types of logistics service providers and maintains that all three types of providers need to be considered as part of the logistics service entity. However, to our knowledge, the existing literatures have largely neglected the indirect connections among supply chain members and logistics service providers.

A focal firm might outsource to a third party logistics firm and build a relationship with it. In practice, the third part logistics firm may not physically carry out all the logistics activities. Instead, the third party logistics firm might further outsource certain activities to various logistics intermediary firms and carriers. Logistics intermediary firms purchase from multiple carriers and consolidate goods. Meanwhile, the focal firm's suppliers and customers might also outsource to the same logistics firm. Therefore, there is a logistics service supply chain. Carriers, logistics intermediary and TPL firms are interdependent and they are interacting with each other in the logistics service supply chain. Figure 2.1 illustrates the idea.

Logistics service providers cooperate with each other horizontally. Cruijssen *et al.* (2007) argue that this horizontal cooperation in logistics is gaining momentum quickly. They define horizontal cooperation as developing win-win situations among companies that are active at

the same level of the supply chain in order to increase performance (Cruijssen *et al.*, 2007). Mason (2009) suggests that modern day logistics service provision involves managing many inter-business relationships; vertical up and down the supply chain with customers, customers' customers, suppliers, suppliers' suppliers and horizontally with other logistics service providers. Hertz and Alfredsson (2003) argue that logistics firms are urged to manage all of these relationships better in order to develop and sustain a competitive proposition.

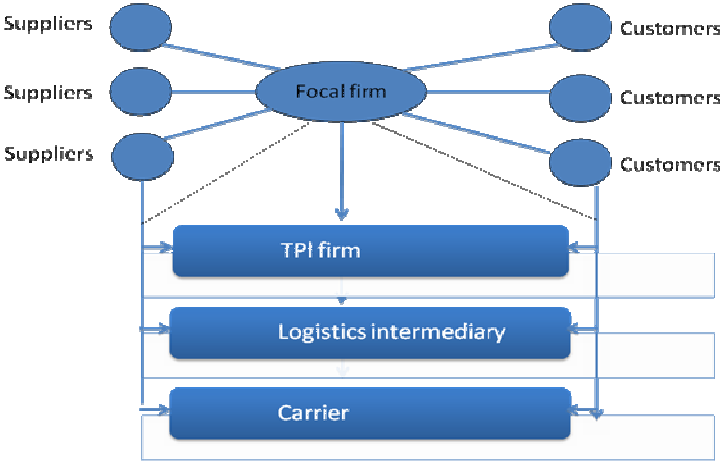


Figure 2.1 Industrial supply chain and the logistics firms network of interaction

Existing literatures mainly distinguish logistics firms in terms of service offerings. Different modes carriers, such as trucking firms and shipping lines, provide transport service and move material physically from point A to point B (Coyle *et al.*, 2000). Logistics intermediary firms perform freight forwarding activities and their major roles are consolidating physical products (Coyle *et al.*, 2003; Bowersox *et al.*, 2010). Third party logistics firms act as middleman between buyer and seller while they provide a bundle of services including warehousing, transportation and value added activities in an integrated way (Virum, 1993; Berglund, 2000).

However, the existing literatures seldom focus on service capabilities and core competences of different types of logistics firms. In essence, different types of logistics firms invest their resources in different areas and develop their capabilities in various ways. Besides, according to Carbone and Stone (2005) and Lemoine and Dagnaes (2003), logistics firms also develop their horizontal networks in order to obtain access to complementary resources and capabilities. Meanwhile, Mason (2009) argues that the exploitation of network to improve the utilization of assets is a capability that logistics firms are increasingly turning to. Therefore, in order to clarify different types of logistics firms, it is needed to understand the difference in service capabilities and core competences.

**Resource Based View**

According to Wernerfelt (1984), firms are bundles of resources. Firm resources include tangible or intangible ones (Hall, 1992). Firms use resources to work and to implement its strategies (Olavarrieta, 1996). Existing literatures have offered different classifications of resources (Amit and Schoemaker, 1993; Barney, 1991; Bogaert *et al.*, 1994; Brumagim, 1994; Grant, 1991) and can be summarized in three categories including input factors, assets and capabilities. Logistics-related input factors contain trucks, ships, warehouse, terminals,

packaging materials, railwaggons and raw skills such as loading, driving skills and picking skills (Olavarrieta and Ellinger, 1997). According to Amit and Schoemaker (1993) and Dierickx and Cool (1989), assets are stocks of available factors that are owned or controlled by the firm. Assets have the characteristic of being “visible” resources (Bogaert *et al.*, 1994). In contrast, capabilities are complex bundles of raw skills, assets and knowledge accumulated through organizational processes, which enable firms to coordinate activities and make use of their resources (Amit and Schoemaker, 1993; Day, 1994; Schulze, 1994). As for logistics firms, capabilities can be knowledge about infrastructure, routing, geography, knowledge of how to consolidate of products and knowledge of handling and sorting.

According to resource based view, differences in resources are causally related to competitive advantages and differences in performance (Schulze, 1994). Strategic resources are those firm-specific resources that are valuable, scarce, imperfectly imitable, and lack of substitutability (Barney, 1991) and endow a company with competitive advantage (Schoemaker and Amit, 1994). Corporate level strategic capabilities are what Prahalad and Hamel (1990) call core competences or core capabilities. Prahalad and Hamel (1990) define core capabilities as specific types of strategic resources that have the additional characteristic of being able to span and support a wide variety of markets. Core capabilities also help to the development of new capabilities or to the enhancement of old ones (Olavarrieta and Ellinger, 1997). They also contribute to the formulation of an organization’s dominant logic and help to define the route a firm chooses and its future positions in the market (Bettis and Prahalad, 1995; Nelson, 1991). Further, core competences can enable a firm to successfully diversify into new markets by exploiting the competence in new product market settings (Prahalad and Hamel, 1990).

Given the differences in their core abilities and competences to create and deploy resources, Lai (2004) has empirically shown that logistics firms do differ in service capability. The differences in their service capabilities lead them to compete in different market segments, in which their resources are best deployed to satisfy the needs of specific customer groups (Lai, 2004). Accordingly, carriers, logistics intermediary firms and third party logistics operate and compete in transport service segment, freight forwarding service segment and third party logistics service segment respectively. Moving from one segment to another segment indicates different investment, deploying different resources and developing different core capabilities.

Logistics firms allocate resources and develop their service capabilities in different ways. Their investments will provide them with access to different market segments. For instance, carriers invest heavily in transport equipments, hiring drivers and operating staffs as well as building terminals. Their core competences are moving products from point A to point B in the most efficient way. Logistics intermediary firms invest in IT systems and representative offices. Their core competences lie in consolidating products and connecting carriers and clients. Third party logistics firms invest in warehouses, IT systems and value added service offerings. Their core competences are rather coordinating carriers, logistics intermediary firms and other service suppliers in order to provide an integrated solution to clients.

### **Industrial Network Approach**

Industrial network approach complements supply chain management literature by introducing the concept of indirect connections between relationships, not just the sequential linkages so common in the supply chain management approach (Jahre and Fabbe-Costes, 2005). Gadde *et al.* (2002) suggest that a network view may complement the more common chain approach in the logistics literature. Further, they propose that a resource approach could complement the more common activity approach in logistics research. Jahre and Fabbe-Costes (2005) suggest

that in the logistics process activities and resources are completely intertwined because resources are vital for the undertaking of activities and have no value unless they are activated. Selviaridis and Spring (2007) propose that network theory provides a framework for mapping activity, resource and capability dependencies and track their evolution over time.

The network model is based on three classes of variables: actors, activities and resources (Håkansson and Johanson, 2002). The embeddedness idea is emphasized by network approach that each business relationship is embedded in a broader network of both social and economic relations (Ford et al., 2003). The characteristics of a business unit reach beyond being a combination of products and facilities. It is a social unit characterized by a specific knowledge about and an ability to work together with certain counterparts (Håkansson and Waluszewski, 2002). Network change results from changes in the way activities, resources and actors are connected to each other (Axelsson and Easton, 1992).

Johanson and Mattsson (2002) present a network model for analysis of an industrial system. They distinguish between production systems and the network of exchange relationships between industrial actors. The actors are engaged in and develop exchange relationships with each other and handle the interdependencies between the resources they control (Johanson and Mattsson, 2002). In addition, Lundgren (1995) depicts an industrial network as the union of a network of actors and a technological system. These models can be adapted to analyze logistics firms and logistics systems. Figure 2.2 presents the idea.

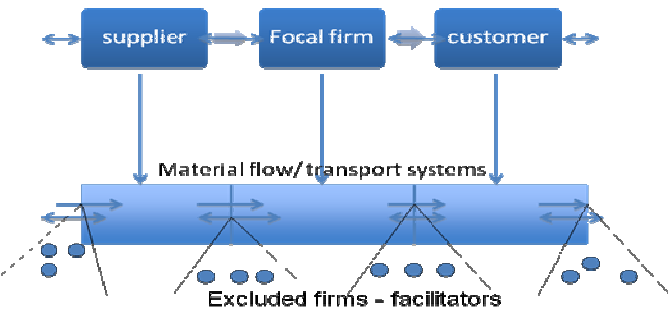


Figure 2.2 Network and systems

Adapted from Johanson and Mattsson (2002)

For instance, Hertz (1993) adapts the model to analyze carriers and transport systems. Carriers form and control transport systems (production systems level) through exchange relationships between various carriers (network of exchange relationships level). Similarly, logistics intermediary firms and third party logistics firms also form and control their service systems through exchange relationship. However, carriers, logistics intermediary firms and third party logistics firms are different from each other in terms of interaction and organization in three networks.

The first network is the local, international or global network of organizations. We call it the network of actors. The network of actors can be broad and adaptable to change or narrow and rigid. Carriers usually have large geographical coverage and they represent each other in different geographical location. Thus, they have wide horizontal network of actors. Logistics intermediary firms also have wide geographical coverage by establishing representative offices or forming alliances with local partners. The horizontal network of actors is wider and

carriers. In comparison, third party logistics firms have relatively smaller coverage. The horizontal network of actors is relatively narrow.

As for logistics firms, it is often neglected that there are vertical networks of actors. For instance, we could take TPL firm as focal firm. TPL firms need to serve their clients in the supply chain network while they also need to coordinate various logistics intermediary firms and multiple carriers on different levels. Besides, logistics intermediary firm might interact with firms in the supply chain network directly and they need to interact with many carriers and TPL firms. Therefore, TPL firms have to have high capabilities to manage vertical network of actors. Logistics intermediary firms have medium capabilities. Carriers have very low capabilities to manage vertical network of actors. Table 2.1 summarizes the differences in terms of network of actors.

*Table 2.1 Capabilities of logistics firms in managing network of actors*

Type of Logistics firm	Capability in managing horizontal network of actors	Capability in managing vertical network of actors
<b>Carrier</b>	Medium	Low
<b>Logistics Intermediary Firm</b>	High	Medium
<b>Third Party Logistics Firm</b>	Low	High

The second network is the network of systems. Jahre and Fabbe-Costes (2005) claim that a logistics network is basically a set of more or less closely connected resources. According to Gadde and Håkansson, 2001), there are always alternative ways of using resources as every resource has multiple features. These systems can be physical systems, traffic systems and other service systems that are organized either locally, regionally or internationally. The service system constitutes the resources that are required by or are available to the service process in order to realize the service concept. Developing the service system concerns the physical/technical environment and organization improvement (Edvardsson and Olsson, 1996). In addition, it is a matter of selecting and training the staff and it is also about training and adapting to the customers. It is the interplay between internal and external resources that lead to the improvements in logistics efficiency and effectiveness (Jahre et al., 2006). Further, these systems contain flows of resources, such as vehicles or load units, that exist in most logistics arrangement (Stefansson and Russell, 2008).

As for carriers, they invest heavily in means of transport, transport equipments and related infrastructures. Large shipping lines, airlines and trucking firms are building up their physical systems to become efficient (Hertz, 1993). The demands from customers but also often from the government and rules and regulations play a role here. The service concept and business idea of carriers are to move physical goods from point A to point B in the most efficient way. To a very large extent, they are focusing on developing efficient rather than effective systems. The know-how of carriers lies in operating its physical systems and transport equipments in the most efficient way. Their capability in managing network of systems is high. The service concept and core business idea of logistics intermediary firms are different. Their major task is to consolidate physical goods. They are focusing on coordinating multiple clients and carriers. Thus, they invest mainly in their IT systems and building representative offices in different locations. Logistics intermediary firms also concentrate on efficiency. Their core business is consolidating products and connecting carriers and clients. However, their capability in

managing network of systems is lower than carriers. In comparison, TPL firms attach great importance to effectiveness. They usually have warehouses and advanced IT systems. TPL firms try to make good use of their warehouses while they also provide various value-added services to their clients. In addition, TPL firms utilize their advanced IT system and develop their knowledge to coordinate clients, logistics intermediary firms and carriers on various level in order to provide integrated bundle of services (Hertz and Macquet, 2006). But their capability in managing network of systems is even lower. Table 2.2 summarizes the capabilities of different logistics firms in managing network of systems.

*Table 2.2 Capabilities of logistics firms in managing network of systems*

Type of logistics firm	Investment	Know How	Capabilities in managing network of system
<b>Carrier</b>	Transport System	Move products from point A to point B in the most efficient way	High
<b>Logistics Intermediary Firm</b>	Freight Forwarding Service System	Consolidating products and connecting carriers and clients	Medium
<b>Third Party Logistics Firm</b>	Third Party Logistics Service System	Coordinate clients, logistics intermediary firms and carriers in order to provide integrated service	Low

The third network of vital importance for the logistics firms are the supply chain networks of the customers and the material flows of the supply chain. Studies have been made of how especially the TPL firms are taking over more activities and invest in resources needed for the customers’ physical flows along the supply chain. TPL firms can play different roles in supply chains. Certain elements of the client’s strategy shape the outsourcing decision and requirements, which in turn influence the role of TPL firms within the supply chain (Bolumole, 2003). TPL firms can deliver functional logistics services as a third-party logistics service provider or provide value-added and virtual logistics in an integrated way acting as supply chain logistics coordinator or logistics process integrator (Bolumole, 2001). TPL firms can also contribute to supply chain integration and performance by being as ‘tool’ used by their clients (Fabbe-Costes et al., 2009). Besides, TPL firms can have a critical role in linking users to their major vendor and customers, thereby facilitating supply chain integration (Lieb and Bentz, 2004). The TPL-client relationship is usually long term orientated and characterized as strategic partnership. Developing a new client for TPL firm is relatively hard since it requires dedicated resources and specialized knowledge. Therefore, TPL firms have a relatively small number of clients.

As for carrier and logistics intermediary firms, they are usually part of numerous supply chain networks. They have a large number of clients. Adding a new client for carrier and logistics intermediary firm is relatively easy. They seldom focus on any specific supply chain. Their major concerns are moving goods physically from point A to point B in the most efficient way. Their capabilities of managing physical flows of any specific supply chain is lower than third party logistics firms. Table 2.3 illustrates the differences.



*Table 2.3 Capabilities of logistics firms in managing network of physical flows of a specific supply chain*

Type of logistics firm	Number of Clients	Taking part of supply chain networks	Capability in managing physical flows of a specific supply chain
<b>Carrier</b>	Medium	Medium	Low
<b>Logistics Intermediary Firm</b>	High	High	Medium
<b>Third Party Logistics Firm</b>	Low	Low	High

Logistics firms are part of all three networks but the focus for different types of logistics firms differ. Table 2.4 summarizes the capabilities of logistics firm in three networks. Traditional logistics firms have been re-invented and new types of logistics firms have emerged with the goals of leveraging opportunities from the wider industrial network, not just the supply chain network (Mason et al., 2007). However, how they focus has effects on their investments, risks, ways of organization and how they cooperate with other firms. The core capabilities of carriers lie in their network of systems, managing their horizontal network of actors and linking various clients and carriers. Similarly, logistics intermediary firms have the core capabilities in managing and developing their horizontal network. In contrast, the core capabilities of TPL firms are managing the vertical logistics service network of actors and the physical flows along a specific supply chain.

*Table 2.4 Capabilities of logistics firms in different networks*

Type of logistics firm	Different Networks			
	System	Material flows	Actors vertical	Actors horizontal
<b>Carrier</b>	<b>High</b>	<b>Low</b>	<b>Low</b>	<b>Medium</b>
<b>Logistics Intermediary Firm</b>	<b>Medium</b>	<b>Low</b>	<b>Medium</b>	<b>High</b>
<b>Third Party Logistics firm</b>	<b>Low</b>	<b>High</b>	<b>High</b>	<b>Low</b>

In practice, all types of logistics firms need to cooperate with other firms and make use of each other in order to cover wider market and/or offer wider range of services (Hertz and Macquet, 2006). On the other hand, there is always a latent competition between firms in all areas except fully complementary. Table 2.5 illustrates the idea. Different logistics firms cooperate with each other because they have completely different geographical coverage and service offerings. When they cooperate, they can complement each other in terms of geographical coverage and service offerings. Different logistics firms might operate in similar geographical markets but their service offerings are different. When they cooperate, they can provide wider range of services to clients in specific markets. Similarly, logistics firms might provide similar services but their geographical coverage are different. When they collaborate, they can cover wider market. Some logistics firms are fully overlap in terms of service offering and geographical coverage. They might still need to collaborate since no one can serve the client independently.

*Table 2.5 Cooperation in market coverage and service*

*Adapted from Hertz (1996)*

<b>Service offering/ Geographical coverage</b>	<b>Complement</b>	<b>Overlap</b>
<b>Overlap</b>	<b>Offering a wider range of services</b>	<b>Fully overlap</b>
<b>Complement</b>	<b>Fully complement</b>	<b>Covering wider market</b>

### **EMPIRICAL CONTEXT**

Our research sites are Oriental Group and Dimerco Express Group. With the growth of these two companies, they have tried to developed their business into different market segments. During the development process, they have experienced different challenges. Therefore, these two are chosen in order to illustrate our conceptual model. We follow a longitudinal, processual and comparative case based approach (Yin, 1994) studying the three networks of Oriental Group and Dimerco Express Group. Empirical material has been collected through semi-structured interviews, observations and documents during a period of one year at both companies.

The informants are chosen to include managers in different levels with strategy related roles as well as non-strategy related roles. In order to discover as much information as possible, our interviews contain broad questions and encourage more interaction between the researchers and the informants. The analysis of our empirical data has been inspired by grounded theory (Strauss and Corbin, 1990).

#### **Oriental Group**

Oriental Group is founded in Hong Kong during a downturn of Asian economy and the return of Hong Kong to Mainland China. Oriental Logistics, a member of this group, is a major asset-based, Third party logistics firm in Hong Kong which operates its own warehouses, trucking fleet and in-house advanced warehouse management systems. In the start-up process, it only provides warehousing services and very limited transportation services in the marketplace. By implementing a client-centric partnership model and providing quality logistics, it has successfully become a TPL firm. Oriental Logistics has grown dramatically in Greater China area together with its clients and it has established wholly owned subsidiaries and warehouse and distribution operations in Beijing, Shanghai, Taiwan and Guangzhou.

Oriental Logistics has a macro view towards its customers and it collects various kinds of data continuously. It tries to probe what service the customer wants and his/her specification. It would also investigate clients' product value. It tries to find out clients' operation strategies in Hong Kong. It also intends to articulate its client's position in its supply chain and to understand the role of Hong Kong in their global operations. Further, Oriental Logistics is striving for working with client's suppliers and customers in order to work with client's supply chain. The ultimate goal for Oriental Logistics is to provide a total solution to its clients.

Polk Audio is a major client of Oriental Logistics and its product offerings range from speakers, subwoofer and amplifiers for home, automotive and marine applications. Polk

Audio sets up its manufacturing plants in Mainland China and Vietnam for the Asia-Pacific sales distribution. Oriental logistics becomes the TPL firm for Polk Audio's Asia-Pacific region in 2002. Oriental Logistics performs the functions of the logistics hub in the Asia region. In addition, it operates and manages the import and export shipments. On the one hand, Oriental Logistics helps to coordinate with Polk Audio's suppliers' import shipments and the storage of these import shipments. By connecting its web information system to the manufacturer, Oriental Logistics is able to track the shipment status and provide instant inventory visibility. Thus, Polk Audio's suppliers and Polk Audio can manage the inventory in a better way. On the other hand, Oriental Logistics is handling export shipments and coordinating Polk Audio's customers. With the increasing demand of just-in-time delivery, Polk Audio adopts the change in its order fulfillment in smaller quantities and more frequent manner. Therefore, Oriental Logistics cooperates with the change and tries to coordinate Polk Audio's customers in a different way. By instant information communication with Polk Audio's customers, Oriental Logistics combines several orders in the same geographical area together in order to generate full container load. Then, it manages the transportation with an optimized schedule.

Increasingly, Oriental Group's clients have placed high demand of freight forwarding and related services. In order to meet the challenge and guarantee the service quality, Oriental Logistics Express is founded in Oriental Group. Oriental Logistics Express handles all necessary freight forwarding, shipping documentation and custom declaration for different countries, with its full coverage of international networks including PR China, Taiwan, Singapore, Malaysia, Europe and United States. However, the international network coverage is based on cooperation with local agents. Oriental Logistics Express does not have any wholly own subsidiary in local regions. Thus, its freight forwarding service is less competitive in terms of price. Oriental Logistics Express realizes the problems and tries to build its own network. But building such a network is time consuming and demands intensive investment. Therefore, Oriental Logistics Express looks for potential investors and tries to cooperate with local partners in establishing joint venture. Further, it requires Oriental Logistics Express to develop its knowledge in freight forwarding business.

### **Dimerco Express Group**

Dimerco Express Group (DEG) is established in 1971 as a logistics intermediary firm providing air freight forwarding service. In the beginning, DEG wants to focus on freight forwarding as its core business and continuously works on its global service network. Given the fact that the global market is diversified, DEG has followed different strategies and focuses in different regions. Owing to the fact that Europe is a big market but DEG does not have competence in this region, it chooses to cooperate with local firms as strategic alliance. As for US, people from Taiwan and Mainland of China are rather familiar with the region. Many people even have their education background in US. Therefore, DEG prefers to have its wholly owned offices and subsidiaries. As far as Greater China is concerned, since many clients of DEG are actively operating in this region, DEG has decided to build its own network by establishing more than 30 daughter companies. In other places, it is more like a mixture. Currently, DEG has quite a number of offices in Asia. DEG starts its business in Asia relatively early. The driving force for stretching its network in Far East Asia is the development of Taiwanese companies in these regions. However, due to local authority and culture difference, DEG chooses to collaborate with local partners in the form of joint venture.

Having such an intensive global coverage requires large investment. DEG has managed to obtain resources by listing itself in Taiwan Stock Market.

DEG positions itself as a non-asset based service provider. So it does not need planes nor vessels. It does not need investment in warehouses either. It majorly puts effort into its back office and invests a lot in its office facilities and IT system. Growing with its clients, DEG has been required to offer more integrated services. As a result, DEG has decided to develop itself into a third party logistics firm. On the supply side, DEG cooperates with local service providers in terms of local transportation and warehousing in order to expand its service portfolio. Besides, DEG develops new service products in other areas such as customs clearance services and air cargo insurance selection.

On the demand side, DEG identifies a couple of key clients and goes deeper into their supply chain. By visiting the clients' suppliers and customers, DEG acquires in-depth knowledge of client's supply chain and the unique characteristics of different flows along the supply chain. DEG proactively introduces new service package to its clients and tries to work closer with client's suppliers and customers. Further, DEG tries to play a role as coordinator in client's supply chain. One example is working with SAMSUNG in mainland of China. SAMSUNG has multiple factories in different parts of China and each factory has dozens of suppliers. DEG analyzes the physical flows related to inbound operation and comes up with an optimized solution. DEG first categorizes the suppliers in terms of geographical location and volume. Then, based on its advanced IT system, it generates a delivery proposal. DEG coordinates the suppliers and local trucking companies so the local trucking companies can pick up the goods in the right sequence and deliver the goods to the factory on time.

Third party logistics firm needs different knowledgeable and skilled personal than logistics intermediary firm. Thus, DEG puts great emphasis on the education and development of employees. Employees often start with a single function entry-level position, and then change to different functions and positions to move up the corporate ladder. To gain experience in different functions and positions, employees can obtain cross-functional knowledge and enhance their logistics skills and ability.

## **DISCUSSION**

Oriental Group starts its major daughter company Oriental Logistics in providing integrated logistics services. As a third party logistics firm, Oriental Logistics only focuses on a few clients and tries to build deeper relationships with its clients. Oriental Logistics invests mainly in its third party logistics service system. It concentrates on building its capabilities in managing the network of vertical actors. The cooperation with Polk Audio demonstrates that Oriental Logistics is good at coordinating multiple actors within a specific supply chain. Its core competence lies in managing physical flows of a specific supply chain.

In contrast, DEG starts to provide air freight forwarding service. It invests heavily in its freight forwarding system and building its international coverage. DEG focuses on enhancing its capabilities in connecting and managing its representative offices, daughter companies and the network of systems. As a logistics intermediary firm, DEG's core competence is managing the network of horizontal actors and systems.

Both of the case companies have seen opportunities to step into a new business area but they have experienced difficulties and challenges. Oriental Group wants to add freight forwarding service into its service portfolio. It starts another daughter company Oriental Logistics Express. However, Oriental Group's core competence is within logistics operation and it has

limited knowledge in the freight forwarding business. Therefore, Oriental Logistics Express cannot leverage the core competence of Oriental Group into its core business. It has to find alternative ways to develop. Oriental Logistics Express needs to build its capability to manage the network of horizontal actors and the network of freight forwarding service systems. Therefore, Oriental Group is required to invest and develop differently.

DEG starts as a logistics intermediary firm. With the development of the firm, it intends to offer wider scope of services and become a third party logistics firm. Thus, it selects a few clients and tries to go deeper into their specific supply chains. DEG also invests in building its third party logistics service system. As the cooperation with SAMSUNG illustrates, it develops its capability to manage the network of vertical actors and physical flows of a specific supply chain. Thus, DEG successfully turn itself from a logistics intermediary firm into a third party logistics firm.

Both firms wanted to develop into other business to reduce dependence on other logistics firm, to follow customer's changing needs and increase customer loyalty. Since the basic logics, capabilities and networking are different, it is difficult for both of the case companies to operate. They have to build up the necessary network and invest in the necessary intangible and tangible resources. However, the existing focus and competences hinders the development into the other type of firm. The basic focus becomes difficult to change since it is in the minds and competence of the employees in a service firm. Thus, these two firms have to obtain a trade off.

## CONCLUSIONS

Logistics firms are seldom treated as supply chain members and they are rarely regarded as focal company in analysis. In addition, logistics and supply chain management literatures only consider vertical supply chain network while horizontal logistics network is often neglected. Therefore, our understanding of logistics firms and logistics service network is limited. By taking the logistics firm as the focal firm, we have pointed out that there is a logistics service supply chain. Besides, we have illustrated that there are several levels of the logistics network. We maintain that it is needed to perceive the supply chain network both vertically and horizontally.

Logistics firms differ from each other in terms of service capabilities and core business ideas. Drawing on resource based theory and industrial network approach, we have shown that logistics firms have clear difference in service capabilities and their core business ideas shift with the network in focus. Carriers are asset-based and their core capabilities lie in their network of systems and management of their horizontal network of actors. Their core business ideas are moving goods from point A to point B in the most efficient way. Based on their network of systems and horizontal network of actors, efficiency is their major concern. Logistics intermediary firms are usually non-asset based and their core capabilities are consolidating goods and managing their horizontal network of actors. Their major concern is connecting clients and carriers while providing freight forwarding services in the most efficient way. In contrast, TPL firms develop their core capabilities to manage the logistics network and physical flows along the client's supply chain. Their core business idea are offering integrated logistics service in a customized way as well as coordinating the vertical network of actors in the logistics network.

Owing to the fact that different types of logistics firms have different core capabilities, they need to cooperate and make use of each other in order to fulfill client's requirements. Logistics firms may operate in different geographical market and/or provide different services

so they can complement each other. Cooperating with each other can help them to cover wider geographical markets and/or provide wider range of service. In some cases, some logistics firms may fully overlap in terms of geographical coverage and service offerings. Cooperation can still give them the possibility to serve large clients.

The differences in their service capabilities lead logistics firms to compete in different market segments. They need to develop their capabilities differently in order to satisfy the needs of various customer groups. It indicates different directions for investment. Carriers invest heavily in the transport systems and building the service network. Logistics intermediary firms invest mostly in the freight forwarding service system and building their service network. In contrast, TPL firms invest greatly in warehouses and third party logistics service system. Changing from one type of logistics firms to another type of logistics firms indicates change of the network in focus and change of investment. It also means development of new capability, knowledge and new clients.

Some logistics firms have seen opportunities to step into new business areas in order to provide wider scope of logistics services and enhance their service portfolio. However, such kind of strategic move is costly and difficult. It may encounter difficulties and challenges. Executives need to take the three different networks into consideration in order to make better analysis and decisions. Further, they need to understand the different logics of the logistics firms and their interdependence. The network focus and capabilities of one firm seem to hinder the possibility to become competitive in the other field. Thus, forming a separate unity seems important.

## REFERENCES

- Amit, Raphael and Paul J. H. Schoemaker (1993), "Strategic Assets and Organizational Rent," *Strategic Management Journal*, 14 (1), 33-46.
- Andersson, Dan (1997), "Third Party Logistics-Outsourcing Logistics in Partnerships," Department of Management and Economics, Linköping Institute of Technology, Linköping.
- Axelsson, Björn and Geoff. Easton (1992), *Industrial Networks: A New View of Reality*, London: Routledge.
- Bagchi, Prabir and Helge Virum (1998), "Logistical Alliances: Trends and Prospects in Integrated Europe," *Journal of Business Logistics*, 19 (1), 191.
- Barney, Jay (1991), "Firm Resources and Sustained Competitive Advantage," *Journal of Management*, 17 (1), 99.
- Berglund, Magnus. (2000), "Strategic Positioning of the Emerging Third-Party Logistics Providers," Dissertation, Department of Management and Economics, Linköping University, Linköping.
- Bettis, Richard and C. K. Prahalad (1995), "The Dominant Logic: Retrospective and Extension," *Strategic Management Journal*, 16 (1), 5-14.
- Bhatnagar, Rohit and S. Viswanathan (2000), "Re-Engineering Global Supply Chains Alliances between Manufacturing Firms and Global Logistics Services Providers," *International Journal of Physical Distribution & Logistics Management*, 30 (1), 13-34.
- Bogaert, I., R. Maertens, and A. Van Cauwenbergh (1994), "Strategy as a Situational Puzzle: The Fit of Components," in *Competence-Based Competition*, ed. G. Hamel and A. Heene, Chichester: John Wiley.
- Bolumole, Yemisi, A. (2001), "The Supply Chain Role of Third-Party Logistics Providers," *International Journal of Logistics Management*, 12 (2), 87-102.
- (2003), "Evaluating the Supply Chain Role of Logistics Service Providers," *International Journal of Logistics Management*, 14 (2), 93-107.
- Bowersox, Donald, David Closs, and M. Cooper (2010), *Supply Chain Logistics Management*, New York: McGraw-Hill.
- Brumagim, A.L. (1994), "A Hierarchy of Corporate Resources " in *Advances in Strategic Management*, Vol. 10A, ed. P. Shrivastava, A. S. Huff and J.E. Dutton, Greenwich: JAI Press.
- Carbone, Valentina and Marilyn A. Stone (2005), "Growth and Relational Strategies by the European Logistics Service Providers: Rationale and Outcomes," *Transportation Research Part E*, 41 (6), 495-510.
- Cooper, Martha, Douglas Lambert, and Janus Pagh (1997), "Supply Chain Management: More Than a New Name for Logistics," *The International Journal of Logistics Management*, 8 (1), 1-14.
- Coyle, John, Edward Bardi, and John Langley (2003), *The Management of Business Logistics: A Supply Chain Perspective*, Ohio: Thomson Learning.
- , Edward Bardi, and Richard Novack (2000), *Transportation*, Cincinnati, Ohio: South-Western College.

- Cruijssen, Frans, Wout Dullaert, and Hein Fleuren (2007), "Horizontal Cooperation in Transport and Logistics: A Literature Review," *Transportation Journal*, 46 (3), 22-39.
- Daugherty, P. J., T. P. Stank, and D. S. Rogers (1996), "Third Party Logistics Service Providers: Purchaser's Perceptions," *International Journal of Purchasing and Materials Management*, 32 (2), 23-29.
- Day, George. (1994), "The Capabilities of Market-Driven Organizations," *Journal of Marketing*, 58 (4), 37-52.
- Dierickx, Ingemar and Karel Cool (1989), "Asset Stock Accumulation and Sustainability of Competitive Advantage," *Management Science*, 35 (12), 1504-11.
- Edvardsson, Bo and J. Olsson (1996), "Key Concepts in New Service Development," *Service Industries Journal*, 16 (2), 140-64.
- Fabbe-Costes, Nathalie, Marianne Jahre, and Christine Roussat (2009), "Supply Chain Integration: The Role of Logistics Service Providers," *International Journal of Productivity and Performance Management*, 58 (1), 71-91.
- Ford, David, Lars-Erik Gadde, Håkan Håkansson, and Ivan Snehota (2003), *Managing Business Relationships*, Chichester: John Wiley.
- Gadde, Lars-Erik and Håkan Håkansson (2001), *Supply Network Strategies*, Chichester: John Wiley.
- Gadde, Lars-Erik, Håkan Håkansson, Marianne Jahre, and Göran Persson (2002), "'More Instead of Less'-Strategies for the Use of Logistics Resources," *Journal of Chain and Network Science*, 2, 81-93.
- Grant, R.M. (1991), "The Resource-Based Theory of Competitive Advantage," *California Management Review*, 33 (3), 114-35.
- Håkansson, Håkan and Jan Johanson (1992), "A Model of Industrial Networks," in *Understanding Business Markets*, ed. Ford, London: Thomson Learning, 145-49.
- Hall, R. (1992), "The Strategic Analysis of Intangible Resources," *Strategic Management Journal*, 13 (1), 135-44.
- Harland, Christine (1996), "Supply Chain Management: Relationship, Chains and Networks " *British Journal of Management*, 7, 63-80.
- Hertz, Susanne and Monica Alfredsson (2003), "Strategic Development of Third Party Logistics Providers," *Industrial Marketing Management*, 32 (2), 139.
- Herz, Susanne (1993), "The Internationalization Processes of Freight Transportation Companies," Stockholm School of Economics, Stockholm.
- Håkansson, Håkan and Johan Jan (2002), "A Model of Industrial Networks," in *Understanding Business Markets*, ed. D. Ford, London: Thomson Learning, 145-49.
- Håkansson, H. and A. Waluszewski (2002), "Interaction and Resource Development," in *Managing Technological Development*, London: Routledge, 25-40.
- Jahre, Marianne and Nathalie Fabbe-Costes (2005), "Adaptation and Adaptability in Logistics Networks," *International Journal of logistics: Research and Applications*, 8 (2), 143-57.
- Jahre, Marie, Lars-Erik Gadde, Håkan Håkansson, D. Harrison, and Göran Persson (2006), *Resourcing in Business Logistics*, Koege: Liber and Copenhagen Business School Press.



- Jan, Johan and Lars-Gunnar Mattsson (1992), "Network Positions and Strategic Action- an Analytical Framework," in *Understanding Business Markets*, ed. D. Ford, London: Thomson Learning, 183-97.
- Knemeyer, Michael and Paul Murphy (2004), "Evaluating the Performance of Third-Party Logistics Arrangements: A Relationship Marketing Perspective," *Journal of Supply Chain Management*, 40 (1), 35.
- Lai, Kee-Hung. (2004), "Service Capability and Performance of Logistics Service Providers," *Transportation Research Part E*, 40, 385-99.
- Larson, Paul and Arni Halldorsson (2004), "Logistics Versus Scm: An International Survey," *International Journal of logistics: Research and Applications*, 7 (1).
- Lemoine, W. and Lars Dagnaes (2003), "Globalisation Strategies and Business of Organisation of a Network of Logistics Service Providers," *International Journal of Physical Distribution & Logistics Management*, 33 (3), 209.
- Lieb, Robert and Hugh L. Randall (1996), "A Comparison of the Use of Third-Party Logistics Services by Large American Manufacturers, 1991, 1994, and 1995," *Journal of Business Logistics*, 17 (1), 305.
- Lieb, Robert and Brooks A. Bentz (2004), "The Use of Third-Party Logistics Services by Large American Manufacturers: The 2003 Survey," *Transportation Journal*, 43 (3), 24-33.
- (2005), "The Use of Third-Party Logistics Services by Large American Manufacturers: The 2004 Survey," *Transportation Journal*, 44 (2), 5-15.
- Lundgren, A. (1995), "Industrial Networks: Networks of Actors and Technological Systems," in *Technological Innovation and Network Evolution*, London: Routledge, 77-104.
- Mason, R. (2009), "The Evolving Domain and Definition of Business Logistics," in *NOFOMA*, Jönköping.
- Mason, Robert, C. Lalwani, and R. Boughton (2007), "Combining Vertical and Horizontal Collaboration for Transport Optimisation," *Supply Chain Management: An International Journal*, 12 (3), 187-99.
- Mentzer, John, William De Witt, James Keebler, S., Soonhong. Min, Nancy Nix, W., and Zach G. Zacharia (2001), "Defining Supply Chain Management," *Journal of Business Logistics*, 22 (2).
- Mortensen, O. and O. Lemoine (2008), "Integration between Manufacturers and Third Party Logistics Providers? ," *International Journal of Operations & Production Management*, 28 (4), 331-59.
- Nelson, R. (1991), "Why Do Firms Differ and How Does It Matter?," *Strategic Management Journal*, 14 (3), 179-92.
- Olavarrieta, Sergio (1996), "Market Attractiveness, Resource-Based and Evolutionary Approaches to Strategy: A Comparison.," in *Development in Marketing Science*, ed. E. Wilson and J. Hair, 34-38.
- Olavarrieta, Sergio and Alexander Ellinger (1997), "Resource-Based Theory and Strategic Logistics Research," *International Journal of Physical Distribution & Logistics Management*, 27 (9/10), 559.

- Potter, A. and C. Lalwani (2005), "Supply Chain Dynamics and Transport Management: A Review," in *CUIMRC Working Paper Series* Vol. 14: Cardiff Business School.
- Prahalad, C. and G. Hamel (1990), "The Core Competence of the Organization," *Harvard Business Review*, 68 (3), 79-91.
- Schoemaker, Paul and Raphael Amit (1994), "Investment in Strategic Assets: Industry and Firm-Level Perspectives," in *Integrated Marketing Communications*, ed. D. Schultz, R. Lauterborn and S. Tannenbaum, New York: NTC Business Books.
- Schulze, W.S. (1994), "The Two Schools of Thought in Resource-Based Theory: Definition and Implications for Research," in *Advances in Strategic Management*, Vol. 10A, ed. P. Shrivastava, A.S. Huff and J.E. Dutton, Greenwich: JAI Press.
- Selviaridis, Konstantinos and Martin Spring (2007), "Third Party Logistics: A Literature Review and Research Agenda," *International Journal of Logistics Management*, 18 (1).
- Sheffi, Yosef (1990), "Third Party Logistics: Present and Future Prospects," *Journal of Business Logistics*, 11 (2), 27-39.
- Sink, Harry, L. and John Langley, C. (1997), "A Managerial Framework for the Acquisition of Third-Party Logistics Services," *Journal of Business Logistics*, 18 (2), 163.
- Stefansson, Gunnar. and D. Russell (2008), "Supply Chain Interfaces: Defining Attributes and Attribute Values for Collaborative Logistics Management " *Journal of Business Logistics*, 29 (1), 347-59.
- Stefansson, Gunnar (2006), "Collaborative Logistics Management and the Role of Third-Party Service Providers," *International Journal of Physical Distribution & Logistics Management*, 36 (2), 76.
- Wernerfelt, Birger (1984), "A Resource-Based View of the Firm," *Strategic Management Journal*, 5 (2), 171.
- Wilding, Richard and Rein Juriado (2004), "Customer Perceptions on Logistics Outsourcing in the European Consumer Goods Industry," *International Journal of Physical Distribution & Logistics Management*, 34 (7/8), 628-44.
- Virum, Helge (1993), "Third Party Logistics Development in Europe.," *Logistics and Transportation Review*, 29 (4).