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How Third Party Logistics Providers Create Effectiveness and Efficiency by Coordinating customers' activities and strategies

Susanne Hertz, Stockholm School of Economics<sup>1</sup>

Monica Macquet, Stockholm School of Economics<sup>2</sup>

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<sup>1</sup>Associate professor at the dept of Marketing, Distribution and Industry Dynamics, phone: -46-8-736 95 32, facs: -46-8-33 43 22, e-mail: susanne.hertz@hhs.se

<sup>2</sup>Doct. student at the Dept of Marketing, Distribution and Industry Dynamics, Phone no -46-8-7369569, facsimil: -46-8-33 43 22, e-mail monica.alfredsson@hhs.se

## How TPLs create effectiveness and efficiency by coordinating customers' activities and strategies

By offering customer differentiation, JIT transports, express deliveries, after sales services all at competitive prices the large international firms seek to secure future growth. These activities have intensified the interest for supply chain management and logistics solutions.

At the same time the majority of MNEs outsource the operation of logistics to transport and logistics providers. These providers are taking over a large variety of services such as transportation, warehousing, warehousing services, pick and pack, packing, statistics and many other value added services.

Hence the transport and logistics companies and their international networks become important means of international competition. As a result alliances with transport and logistics companies - third party logistics providers (TPL) - are growing in number and content.

An important prerequisite for the MNEs to outsource the logistics activities, would be that the TPL is offering certain advantages in quality, speed, flexibility, know how and price. Thus to create skills, competences, and gain scale/scope advantages that are superior to customers' will be necessary for the survival as a logistics provider. A main source of achieving this would be through selection, coordination and learning from processes of different customers and customers' customer and suppliers.

However, few studies in supply chain management have involved the importance of TPL before mid 1990s. These later studies have been focusing mainly on the service

products offered by TPL, customer demands, skills needed and the degree of integration in their relationships with their customer (Lieb & Randall, 1996, Andersson, 1997; Berglund, 1998; Bagchi & Virum, 1998)

There has been little of interest of the interdependence of different customers, and how scale and scope economies shift with different customer combinations and the importance of the customers customer for the TPL performance and customer relationships, which is the focus of this paper.

There are three basic questions tied to the understanding of how TPLs coordinate their customers and create efficiency and effectiveness.

The first question is a more general one discussing what the bases are for TPL coordinate different customer activities? Another question is to what extent the knowledge developed from specific customers is standardized, utilized and /or transferred to other customers. Finally, an important question would be to what extent customers indirectly via TPL actually influence each other?

These are some of the main questions that we want to answer in our study.

Based on these the *purpose of the paper* is to study how TPL firms coordinate their customers in order to offer competitive services and what are the important factors influencing the effectiveness and efficiency of the coordination.

In its coordination the logistic firm will have to handle the complexity of coordinating not only the customers' systems as well as those of the customers' customer and the suppliers being part of the same systems.

Theoretically we use a combination of network approach, business logistics and supply chain management involving the coordination of firms, logistics activities and resources.

We will base our findings on empirical studies of TPLs, their customers and customers' customer and the suppliers.

## **Theoretical framework**

How do TPL coordinate their customers' activities and strategies? What activities are suitable to coordinate? What are important determinants for the coordination? How would the market and logistics strategy of the customer influence such coordination?

The focus is on coordination between firms and their activities. This will include TPL services, importance of relationship integration and development, importance of product

characteristics, marketing and logistics of customers making use of the network approach, business logistics and supply chain management.

Since the concept of third party logistics provider has been developed rather recently we start by giving a short definition of the concept.

*A third part logistics provider (TPL)* is defined as the services offered by a middleman in the logistics channel that has specialized in providing, by contract, for a given period, all or a considerable number of the logistics activities for other firms. (Virum, 1993) A *logistics partnership* is defined as a long term formal or informal relationship between shippers and logistics providers to render all or a considerable amount of logistics activities for the shipper.

#### *Relationship and activities*

In the network approach relationships between interconnected actors form the basis of the network. Changes take place within and between relationships, bonds and links involving actors, resources and activities. (Johanson & Mattsson, 1992; Håkansson & Snehota, 1995 ) For a relationship to exist a certain coordination of activities is necessary.

Such a coordination of activities within and between firms normally gives rise to economies of scale and scope and increase of knowledge of the firms involved which in turn create competitive advantage for the TPL. The possibilities to coordinate activities are dependent on the type of activities, the activity chains and the activity structures. (Dubois 1994) The coordination between different types of activities is often based on similarity or complementarity. Similarities might lead to the sharing of resources giving economies of scope or scale while complementarities in activities might lead to a sequential use or differences in times periods. The resource units might be shared between several different activity chains and the activity chains can be either within the firm or between firms. Furthermore, the activity structures for the end products can be analysed from the perspective of different dependencies such as sequence, volume, time, technical connections and location. (Dubois, 1994) The sequence factor is here interpreted as resources by being used sequentially can share resources and increase capacity utilization. Volume creates economies of scale and scope and can increase frequencies. If the activities of the actors are technically connected and adapted the coordination would be more efficient. Combining actors' activities in time seem to be another factor of necessity for coordination. Finally, the fact where the different activities are performed are close in location would decrease the time for transportation

and also risk for damages and delays. What are the type of activities, the activity chains of TPL and what are activity structures?

#### *Type of services and activities*

What are the type of activities performed by TPLs? Several researchers have been studying the contents of logistics services and how third party logistics providers operate. (Andersson; 1995,1997; Berglund, 1998; Bagchi & Virum, 1998; Christopher, 1998; Lieb & Randall, 1996) Typical services outsourced to TPL are transport, warehousing, inventory, value added services, information services and design and re-engineering of the chain. The first three are the most common services of TPL and also the most common services outsourced from industrial firms.(Andersson, 1995; Berglund, 1998) These services are also give rise to economies of scale and scope while others like design and reengineering are more knowledge generating for TPL. The service types can be combined in many ways depending on the demands of the customer.

It seems, however, that these rather rough classifications of services do not divide the actual type of activities, activity chains and structures of TPL so that it will show the possibilities to coordinate activities of customers how the TPLs create competitive advantage based on customer coordination.

Instead we will complement these service types with a discussion of how it would be possible for TPL to create an effective coordination based on complementarities and similarities taking the factors of time, sequence, location, technical connection and volume into consideration.

#### *Relationships and integration*

Another question of importance is to what extent the degree of integration with the customer means a difference for the coordination of activities and activity chains?

In the network approach the exchange within a relationships involves not only an economic, physical, technological, legal and knowledge exchange between firms but also a social exchange where trust and communication are vital. These dimensions are interacting. (Mattsson, 1969; Hertz, 1993) However, trust between firms seems to be especially important when there is much at stake for the firms. This is often true when a firm is outsourcing parts of its supply, operations and/or distribution to TPL. (Maltz & Ellram, 1997)

Furthermore, relationships as well as the networks seem to go through different stages in their development, which is similar to a lifecycle. These stages are formulated as awareness, formation, closer cooperation, extension and maintenance and then finally looser cooperation and dissolution. (Dwyer, Schurr & oh, 1986; Liljegren, 1988; Hertz, 1993) Studies of logistics alliances show that similar changes of increasing integration

and commitment seem to take place in logistics alliances between the TPL and its customers. Over time the relationship deepens and the number of activities outsourced increase. (Bowersox & Dougerthy, 1989; Bagchi and Virum, 1998)

The degree of integration can also be used as a base for classifying alliances so that alliances aiming for the highest degree of integration or commitment would be strategic alliance while the lowest degree of commitment is more open to competition. It is easier to switch a relationship in the first stage when integration is low and the expected future returns are low. Therefore in the first and the last stages in the lifecycles the risk of switching is higher. (Hertz, 1996) The alliances can also be classified in terms of their degree of commitment on a scale from transactional to integrated relationships. (Bowersox & Dougerthy, 1989) Based on the definition of TPL the customer relationships would have to be an integrated and not of the transactional type. However the degree of integration with each customer might vary.

Further, since changes of increasing integration over time also apply to TPL and their customers TPL will have possibilities to gradually increase the volumes and types activities performed for the customers. This way coordination with and of customers will differ and have to change over time.

So far we know that there are different factors in what way the activities of customer can be coordinated and that the coordination will differ and have to change over time because there is an increasing integration.

#### *Product characteristics*

Other specific conditions would be ties to the product characteristics of the product such as product lifecycle, value of the product, etc that might be of importance are uncertainty of demand involving demand fluctuation such as season changes, etc.

Even though a supply chain easily can be seen as a smaller network of connected organisation the studies of TPL have only focused on the relationship between the provider and the customer and not involved other relationships in the network such as customers' customers, customers' supplier or relationships between customers. In the network approach it seem obvious that since firms are interconnected the effects of changing activities would have repercussions on the other relationships. Furthermore if the relationships are only indirectly related an increasing degree of integration would mean increased interconnectedness.

#### *Importance of marketing and logistics strategies*

We know that the marketing and logistics strategy of the customers will matter for what type of demands the customer set on TPL. These demands will have effects not only on the type of activities to be performed but also the way the customers want them performed thereby influencing the activity chains. Therefore this should clearly influence the possibilities for TPLs to coordinate different customers in an effective way.

In the network approach the market strategies are differentiated in the dimensions of the degree to which the firm is a problemsolver and if this ability is of a more general type or customer specific. This gives rise to four different categories which can be high or low in the dimensions of general ability to solve problems and high or low in customer adaptation. The cost hunter (low/ low), the product or service developer (high in general ability/ low adaptation), the customer developer (high/high) and the customer adapter (low general ability/ high adaptation) and the degree the firm being a general problem solver or a customer adapter. (Hammarkvist, Håkansson & Mattsson, 1982)

Whether the customer is a cost hunter or a customer developer will set the demand on the services that they want. A cost hunter would prefer the cheapest possible way to perform and keep a low standardized service without much of adaptation to their customers while the customer developer would need high quality in systems and operations performed by TPL and also a close communication and coordination with their customers. To what extent can TPL live up to these very different demands on their services and activities?

Another important question is how different logistics strategies and specific market conditions of the customers could play a role for the possibilities to coordinate the TPL customers?

Some of the most important strategies discussed in supply chain management literature involve the choice between postponement or speculation strategies. (Pagh & Cooper, 1998; Van Hoek, 1999) Postponement is a concept used in the distribution literature since 1960s which says that the cost of risk and uncertainty are tied to the differentiation (form, place and time) of goods that occurs during manufacturing and logistics operations. If manufacturing and logistics operations can be postponed until final customer commitment are obtained the risk and uncertainty of these operations can be fully eliminated. (Bucklin, 1960) The concept of postponement has been developed for manufacturing and logistics operations. Four different strategies are identified used by MNE; the manufacturing postponement (make to order), the logistics postponement strategy (centralised inventories and distribution), the full postponement (deferred manufacturing and logistics operations) and the full speculation strategy (make to inventory and decentralized inventories). (Pagh & Cooper, 1998)

Speculation is seen as the opposite to postponement where changes in the form, time and place are made at earliest possible to reduce costs. Van Hoek (1999) showed that there was a development towards a higher degree of globalization combined with a higher degree of postponement for full postponement over time.

The concepts of postponement and speculation are often tied to marketing orientation and the selection of marketing strategies of pull or push. These concepts tie into the market strategy seen from a network perspective where the firms choose between being highly skilled in problem solving in general or developing a specific customer adaptation. Through postponement the planning can be more accurate and Forrester effect reduced. (Towill & Cullen, 1999)

To what extent do these different strategies have an effect on the possibilities to coordinate customers of TPL? Will these strategies have to be taken into consideration in order to coordinate different customers' activities in an effective and efficient way?

For a TPL are there any advantages in coordinating demands that are similar on quality, on closeness to customers' customer, etc? Or having customers that are similar in terms of having centralised or decentralised assembly and logistics?

TPLs can also be segmenting towards being skilled in problem solving, creating more standardized value added services or offering more basic services. The scale economies are higher for basic services than for TPL with problem solving as a strategy. (Berglund, Laarhoven, Sharman & Wandel, 1999)

On the whole TPL coordinating customers' activities so that the TPL both develop, create new knowledge and gain scale and scope economies is not an easy task. The issue here is to find out how the accomplish this coordination in an effective and efficient way also taking the related organisations into consideration.

How should TPL combine customers so that they can gain both knowhow development and economies of scale and scope taking into consideration both the differences in the solutions for the customers, the need for coordination of customers, the related organisations involved in the solution and the time it takes before the degree of commitment is developed with the different parties?

## **The Study**

The empirical study is longitudinal with focus on four different types of transport and logistics firms and three of each of their customers and then some of their customers' customer and/or suppliers.

Therefore we are interviewing both TPLs, industrial companies being their customers, the customer customers and some suppliers to customers. There is a need to study several different levels in each of the companies in order to find out how the coordination and adaption is taking place. It is important to understand how activities and services are coordinated both from the customers as well as the logistics company's perspective. We also want to study how the relationships and activities develop over time.

## **Preliminary empirical results**

First of all the results show that coordinating customer activities in an effective way is something that seem to be made in several different dimensions.

Even though TPL combine several different ways we present them one by one and have the discussion of combination at the end.

As we will see some of these dimensions are more of a physical kind while others are more strategic. Therefore we have divided the coordination dimensions into physical and strategic dimensions. The task of coordination is very dynamic task since customer and customers' customer change their demands continuously.

The bases for coordination of TPL are divided into the same customer's customer, the same suppliers, a direct connection in the chain, same geographical coverage, same product area of customers, demands fluctuation of customers' products. The more strategic factors involved customer philosophy and cultural differences, degree of outsourcing and logistics strategy.

### *Same customers' customer*

We have found that the TPL co-ordinate the activities of a number of smaller customers having the same large customer. The TPL set up a special warehouse for these customers which all had similar products. These products are to a very large extent imported and transported directly to TPLs warehouse. Being small suppliers to a big customer demanding frequent distribution covering the whole country the suppliers could coordinate their volumes and increase frequency via TPL. TPL handles all

logistics activities for the customers such as storing the products, re-packing and combining consignments from several suppliers to be delivered to the specific store of the customers, distributing the goods and invoicing based on the customers' customer demands and specifications, making special deliveries when needed, giving customer and suppliers access to warehouse data, statistics, etc. for those customers. TPL has developed a special IT system for the communication, ordering, invoicing, etc between their customers and customers' customer. The customers' customer does only have to place one order even though they are buying from several different suppliers. The small customers are actually partly competitors that have realized that without the service of a TPL they cannot compete with other larger suppliers. A specific very vital service offered to these small customers by TPL is security of the good. By storing product of several suppliers in the same warehouse, the TPL can use the same security system (including three different levels of security as well as special employee training) for these customers. Since these customers are located in the same warehouse, the TPL also have the possibility to use the same people and their know-how for all customers.

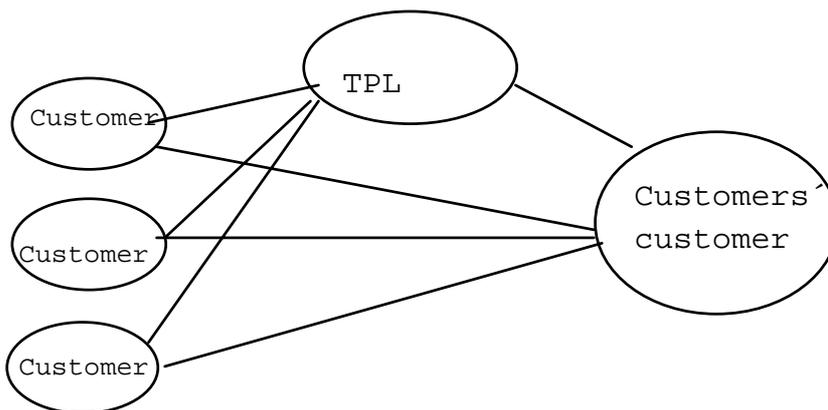


Figure 1: Coordinating based on the same customers' customer

#### *Direct connection in the chain*

In another case TPL co-ordinates the activities of two of their customers linking them together, since one of them is the supplier of computer hardware and the other one is this supplier's customer. When one of the hardware seller's customers is placing an order, the TPL is putting the customised computer together, install the software and deliver it to the customer using the same warehouse. This means that there is a change of ownership without physical transportation between the supplier and buyer. The fact that TPL has both the supplier and buyer as customers is the base for the creation of efficiency. While coordinating the activities of both the supplier and the customer TPL can also easily adapt to the demands of the customer. However in case of a conflict between them TPL might have a difficult situation. As in the first case it is vital that

TPL will not leak sensitive information between the supplier and buyer. Therefore trust between TPL and its customers as well as well designed communication systems and well trained personnel is necessary. Sensitive information can be the prices offered to other customers, costs of buying the products, suppliers to the suppliers, etc. Even the specific assembly costs of TPL could actually be sensitive, since they are used as a base for business calculations. In this case the situation might be problematic if there are several competing firms in the same warehouse.

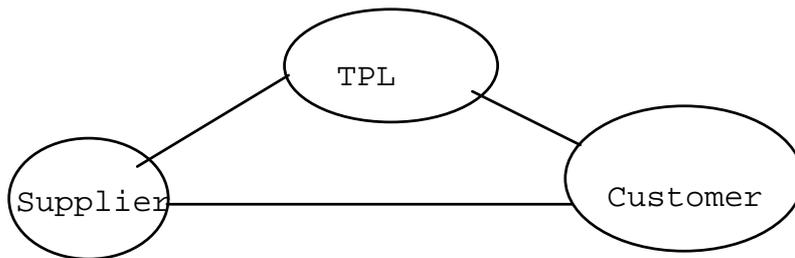


Figure 2: Coordinating based on having both supplier and buyer as customer

#### *Same geographical coverage*

When several customers have the same geographical coverage it is possible for a TPL to co-ordinate the activities of those customers. In this way they can transport the goods of several customers at the same time, creating a higher frequency for the deliveries but also co-utilizing the trailers and drivers. To co-ordinate their customers in order to create scale and scope economies in their operations is part of the basic logic of transportation companies. This is especially important in the case when firms are internationalized and want to transfer large volumes long distances. If the combined volumes are high capacity utilization normally increase. The costs of handling and transportation will decrease per unit and knowledge about the problems of the specific situation in the geographical area increase. Further, TPL can economize on the contacts and administration with suppliers. Even if TPL have out-sourced these activities, they can still gain from having several customers with the same geographical coverage. If the large firms of today have a global network is global, while the TPLs is not, the TPL can use the same contacts in different regions if the customers have the same geographical coverage.

#### *Same supplier*

In another case we have found that TPL is able to co-ordinate the activities of the customers since they all have the same supplier. The co-ordination can be made on the same way as with the geographical coverage, only this is on the supply logistics for the customers. The customer's supplier then becomes an important actor for the TPL. The

customer's supplier and the TPL can learn from each other and develop a more efficient way to handle the flow.

### *Demand fluctuation*

There seem to be three different types of fluctuation. One is based on where in the supply chain the customer has its position. Since capital goods in often seem to have a higher fluctuation than consumer goods.

The next is based on the fact that customer's knowledge about their own business and logistics needs are often lacking. Therefore many customers cannot specify their needs and the number of movements they will have per day. The knowledge is even worse when it comes to expectations of future handling, warehouse space, customer service needed, volumes, etc. At the same time having few customers with whom you are working very closely means that their future development is interdependent. Therefore forecast reliability of the customers is important for TPL possibilities to coordinate and create stable systems.

The third is a possibility to coordinate product with different seasonal variance. This way the TPL can get a more stable operation over the year than those customers would get on their own. If the TPL, for example, would take over the warehouse operation from those customers, they can co-utilize the warehouse, personnel etc.

### *Same product area*

Something that might be of importance is the need of knowledge and understanding of the business activities of the customer. To get able to communicate the needs of the customer and to create the amount of trust needed for an exchange, it is necessary that the TPL understand the every day life of their customer. TPL often takes part in internal meetings at the customers and present important statistics about volumes and quality of the customers business. TPL even has information from customer's customer how it might perceive the customer's products and services.

By handling several customers with products in the same area, the TPL can use and develop the knowledge needed in this area. It is a kind of economies of scale in the utilization of knowledge and knowledge development.

### *Customer philosophy and culture*

It can be important that the market strategies of the companies are equal in some extent. As an example, one TPL has had problems with one customer, since they only wanted cost reduction, while TPL wanted to work for higher quality, service and development of skills. The different aspects of a relationship ended in a separation, where the customer broke the contract. TPL did not cry over this loss, instead they felt relieved. "- If they would not had left, we would probably have kicked them out!" With many other

customer they have a well functioning relationship since both partners are working on development and long term advantages for both parties, instead of focusing on price. This specific TPL said that the culture between TPL and the customer was too different.

#### *Degree of outsourcing*

The customers of TPL might have different willingness and possibilities to out-source different activities to the TPL. In one case the customer wanted to outsource its whole warehouse operation and distribution and wanted the TPL to act as one of their fully owned operation. TPL was to take over systems, rules, communication and personnel and keep it as a separate business in TPL. This way TPL had less possibility to coordinate with other customers, since few resources could be shared. Further, since most of the systems were specific, the gaining of general knowledge for TPL was low. Over time this has changed as regards to the computer system but still the majority of the resources are separate. In another case the customer in the same industry the customer wanted to coordinate its activities with others preferably in the same industry in order to gain economies of scale and scope as well as knowledge. This way the first customer outsourcing almost everything demanding to be treated separately did not add much to TPLs development. The second customer outsourcing less of its activities to TPL actually contributed more to a possible future development of the TPL. To take over the whole logistics operation of customer demanding that it should operate the same way as the other subsidiaries seem to give less possibilities to coordinate activities and resources and call for partly customer specific skills. In this case a fully outsourced business might not be so interesting as the customer who does not demand separated treatment. The latter would also be possible to coordinate and can create generic knowledge for TPL.

#### *Postponement/ speculation*

A related question is coordination of firm having postponement and speculation strategies. Can the different strategies be combined in an effective way or is it more effective to work with customers of one specific logistics strategies?

In one case the customer, where TPL handled the logistics of spare parts, the customer was acquired by another large firm. One used postponement for the spare parts while the other had focused on speculation. For the speculation strategy TPL had to set up systems the most commonly used spare parts were transported to the distributors with a certain frequency while other product were distributed regularly but less often. Special demands were the only thing that was pull dominated. The speculation strategy had to be combined with a good return systems where distributors could hand back the spare parts if they did not need them within a certain period of time. Speculation is totally built on

forecast while the postponement system wait for customer demand. The power and control are very different in the two systems. The combination of strategies became a really big problem since customer as well as distributors not only operated totally different but also had very different attitudes.

### *Summarizing*

We have divided the different dimensions of co-ordination into physical and strategic coordination. The physical co-ordination models include same customer, same supplier, same geographical coverage, same product area, demand fluctuation and direct connection in the chain. The strategic dimensions mentioned by TPL as important were philosophy and culture and degree of outsourcing.

The physical dimensions are used much frequently by TPL for customer coordination than the strategic ones, which reflect the the fact that TPL business concern physical operations but also that many of the TPLs still come from a transportation background. Further, similarities between customers seem to be overwhelmingly important factors for the TPL of today.

These dimensions can of course be combined in many different ways which might help to illustrate how TPL operate to be effective. We summarize by combining these in a matrix.

TPLs categorizing customers to coordination dimensions

Dimensions of coordination	Customer 1	Customer 2	Customer 3, 4, et
Same customers' customer			
Same suppliers			
Direct connection			
Same geographical coverage			
Demand fluctuation seasonal			
Same product area			
Same customer philosophy/culture			
Degree of ( same / outsourcingdiff)			
Postponement/ same/ speculation diff			

Figur 3: Dimensions for customer co-ordination

In the matrix above the coordination dimensions used by TPL of importance for customer coordination mentioned by TPL are present. However, TPL did not discuss the question how these different profiles of customer in these dimensions are best combined and to how it is done practically. Furthermore, in some cases the TPL just do not have a clear picture of the customer from all these dimensions. This is more common in terms of the strategic factors than the physical. Over time as they got to know their customers better some of the strategies of the customers were revealed and TPL realized that a specific customer did not fit their specific mixture of customers. This was reflected on their profitability.

An important prerequisite is that before taking on a new customer a logistics provider must have a very extensive and detailed knowledge not only about the organisation, the physical and communication systems of the customers but also the customers' suppliers and customers. This is necessary in order to coordinate and balance the flows and services of different customers in an effective way. The network of the customers seem to be of high importance for the coordination.

## **Concluding discussion**

In this part we will discuss and analyse the different ways in which coordination is made by TPL and how this can be interpreted theoretically.

Further, we will continue to analyse how the empirical dimensions can be combined and if they actually will lead to an increase in the effectiveness and efficiency of TPLs. Do TPL achieve economies of scale and scope and new knowledge over time?

The next step would be possible development of TPLs in their relationships with customers and customers network?

We will end by discussing how this can influence the choice of strategies of TPL.

Our intention is only the show how some TPL actually work to coordinate their customers in order to create effectiveness and efficiency.

A general reflection is that much of the coordination of customers is made ex post rather than ex ante, which means that they get the customer first and see how they are best coordinated afterwards. Sometimes this might end up by loosing of a customer. Another reflection is that many of the dimensions are used as simple rules of thumb for TPL, which are easy to see both for TPL and the customer. The dimensions have to be developed more in detail in order to really understand how the coordination is made.

So to what extent will the coordination dimension used empirically coincide with the theoretical ones?

As we can see some of the more general differences are that in the theoretical part the discussion of both similarities and complementarities has a high importance while in the empirical dimensions the similarities were extremely dominating. This would apply both to the types of activities and the activity chains. One of the plausible explanations is that TPLs would see this as an important way to specialize into a specific niche.

To what extent are the coordination dimensions of activities structure such as sequence, volume, time, technical connections and location present in the empirical dimensions? (Dubois, 1994)

To what extent would product characteristics and market and logistics strategies be important for TPL in their customer coordination?.

Were trust and integration dimensions of importance for the TPL? How could the development over time influence the coordination?

Finally how could the coordination really increase effectiveness and efficiency?

We use the similarities and complementarities as a base for differentiating between the dimensions and discuss how the empirical dimensions could be an expression to the

theoretical dimensions. How could it gain the economies of scale and scope and lead to increased knowledge?

*Dimensions based on similarities*

Customers' customer and similarity

This one of the most important dimensions for TPL since it connects their own service to customers to their customers services to their customers. In the empirical part TPL saw it as an important dimension for coordination to have the same customers' customer.

This coordination dimension means that TPL can specialize both on the category of customers delivering to a specific customer but also develop a deep knowledge of the customers' customer. When such a coordination is made for the many small customers in relation to their much bigger customer, it is possible for them and for TPL to gain large economies of scale by using the same distribution system and to have a direct on line communication with the big customer. This would give both a better service and lower costs.

Furthermore, the customers' customer can also get large cost savings by getting everything delivered the same time, rationalizing the handling by fewer packages, more adapted flows as well as the centralizing the invoicing. In the process of reducing the number of suppliers the smaller ones often seem to loose and become second tier suppliers. This might be an important way for small firms to stay in direct contact with the big firm, since the big customer still get the almost the same cost saving as if they had one large supplier. However the opportunity and variety of suppliers still exist. In these dimensions the advantages seem to be equally large from both sides.

As for the TPL they also gain advantages in that they can specialize for a specific type of suppliers and their customer. This way the TPL get a deep knowledge of the specific customers and customers' customers situation. Therefore the effectiveness is high for both customers, customers' customers and TPL.

To what extent does this dimension match the theoretical dimensions for activity structures? As far as we can see the same customers' customer seem to create higher volumes in the distribution as well as volumes enough to rationalize the invoicing and the communication with the customers' customer. To a large extent the advantage is based on the location since the distribution goes to final customers all outlets which are the same for all customers. The type of activities are similar and the activity chains as well.

Since the customers of TPL are competitors there must be a deep trust between them and TPL so that sensitive information will not leak between the firms. Since customers are many of the same kind the coordination in time can always be present between some of the customers.

In the specific case the product delivered were also of the same category. This meant that TPL could develop a deep knowledge of the product characteristics leading to training of personnel and selection of handling methods. So the same customers' customer would often combine several of the theoretical dimensions.

#### b) Suppliers and similarity

The same suppliers for a number of customer would actually create similar possibilities to coordinate the type of activities and activity chains.

The deep knowledge of a specific firm and the location advantage giving certain scale and scope advantages. However, the advantages for the customers' customer might not be as obvious. In case specific investments are needed for the transport and handling the goods of the supplier there might be a cost and service advantage for the customers of TPL. This case is not as common as the same customers' customer since some of larger advantages would be gained by the supplier rather than customer customers. Further the terms of delivery often make the supplier responsible for the costs. Therefore the incentive to create such a coordination would not be so high neither for TPL nor the customers.

#### c) Geographical coverage and similarity

Same geographical coverage which was important for TPL in customer coordination involves a coordination based on theoretical dimensions volumes and location. This is important especially for the global customers and TPL. Not only the capacity utilization increases by gaining economies of scale and scope and but also the specific knowledge can be generated. Further, by higher volumes the frequency can increase which would give a higher customer service. The location of customers, suppliers and customers' customers will also be a base for the structure and development of the geographical network of the transport firm.

#### d) Product sand similarities

In the empirical part TPL talked about the same product area which connects closely to similarities in product characteristics that is discussed from a more theoretical point of view.

Through having customers from the same product area TPL can learn not only on the product characteristics but also about how the attitudes and conditions of the business .In some cases they develop a specific knowledge for computer products, grocery

products, automotive industry, white goods or brown goods, etc. Product values, product lifecycles and industry networks and logic are some of the underlying factors for creating effectiveness. This would lead to a special training of personnel in their attitudes and how to handle the products. Being a specialist in certain product can also make certain customers to select your firm. This seems to be a common way for many TPL to develop into a specific niche and increase profitability. Since the industry is in an expansion phase (Berglund, Sharman, de Ven & Wandel, 1999) this would be a way to develop your firm.

#### e) Similarities in philosophy, culture marketing strategy

TPLs stressing the importance of same philosophy and culture can be interpreted as the stressing of the similarities of marketing strategy of customers.

Whether the customer is a cost hunter, a product developer or customer developer will be reflected in the philosophy and culture of the customer's personnel. The attitudes towards the products, to customers and suppliers are very different if the customer sees itself as a cost hunter or a customer developer. (Hammarkvist, et, al.1982)

If a TPL specializes in very low prices and standardized services this would probably match the customers being cost hunters. The problem arise when TPL get a customer that is a cost hunter while itself has decided on high quality and service and have high prices. The attitudes would be very different to that of the customer's. Only in one case did we hear of these type of problems. In this case the relationship to the customer was dissolved.

The consciousness about the marketing strategies of the customers should actually be very high for TPL since they take active part in the customer service by delivering and sometimes packaging and assembling the products. The way the customer want to manage their customer has to be reflected by TPL services and activities. It seems, however, that the coordination of customers by TPL is aware of the strategies of the customer ex post instead of ex ante. It turns into a question of deciding which type of customers that do not fit after a number of trials. Even though they are aware of the problem most of them do not actively decide on using a specific coordination strategy. Part of this can be explained by the high growth in the industry. TPLs do not have time to be so selective. Most firms mix customers with all different types of strategies. This would probably mean that some firms get a much higher service that they asked for and others are not really satisfied with the service they are getting.

#### f) Outsourcing policy - logistics strategies and similarities

What we have seen is that performing assembly, pick and pack and final packaging create a certain knowledge. When a customer is outsourcing its total logistics the

demand on TPL to adapt and to create specific customer systems is much higher. As in one of the cases the customer wanted the outsourced logistics to be handled separately and that TPL should act as one wholly owned distribution center among several in the firm. This meant that the gains of scale and scope economies were limited as well as the creation of more generic knowledge.

Having many customers with this extreme view would give less of competitive advantage and difficulties to develop the business idea of the TPL. In spite of what we would think this kind of close relationship might not have taken so long to develop, since the TPL took over the some of the personnel of the customer.

In other cases when the firms are newly started and want to outsource all logistics activities. An example is a new IT or E-commerce firm with no logistics knowledge. They can gain specific advantages by using a TPL being used to the problems of E-commerce firms. Not only do the TPL have a knowledge about the logistics problems but indirectly they transfer knowledge from other E-commerce firms. The problem is if the small firm does not want the competitors to gain from the knowledge they have developed together with TPL.

#### *Dimensions based on complementarities*

##### f) Customer complementarities and the supply chain

Direct connection in the chain is something that build a technical connection and complementarity between the firms and their activities in the supply chain. In this case it is cheaper for both the supplier and the customer to use the same TPL. The cost of transportation are non existent. The complementarities are part of the supply chain. The activities can be performed in sequence which gives possibilities to higher adaptation and rationalization. Another important factor is the coordination of the location dimension which is almost optimal for the supplier in relation to buyer if they have their warehouses in the same place. Direct connection is an important phenomenon as a base for coordination. It ties the existing TPL customers to each other and may give the TPL a role as an integrator of the supply chain.

##### g) Complementarities in demand fluctuation and product characteristics

This is actually one of the few dimensions that are often mentioned by the TPL as a common way of coordinating. Products can be seasonal or demanded only for a short period. This way resources can be shared and used more efficiently like warehouse and transportation networks. Complementaries can also be found in other product characteristics like combining products that are light and taking much space with others

being compact and heavy. This type of coordination is very much of a coordination of time.( Dubois, 1994)

h) Complementarities in outsourcing philosophy and logistics strategies

The lack of reliability in the forecast of the customers was a problem not only for TPLs planning but also for the coordination of different customers activities. In one case there was a large discrepancy between the actual figures and the forecasts. The expectations and calculations made by the customer when writing the agreement were totally wrong. Since TPL often gets paid per handling or movement in the warehouse this means lower profitability for TPL with possible effects on the other customers.

We know that customers having a pull system often demand higher quality and frequency in their distributions systems for the transports but have a higher reliability in their demand forecast. A pull strategy is often created by postponing manufacturing and/or logistics or both. Waiting until you have the customer order gives a much more reliable forecast.

How would postponement affect the possibility to coordinate between customers?

Such as if you are combining the activities of firms having postponement of manufacturing it might be a good idea to combine similar type of products giving you the advantage of skills and deep knowledge. One TPL assembling computers on customer orders and doing all logistics services then it could use that knowledge for other IT firms. The single product do not have to be the same it might be satisfactory that the industry is the same. Such knowledge can be of high importance for small firms in their start up period.

## Customers' profiles to coordination dimensions

Dimensions of coordination	Criteria	Customer 1	Customer 2	Customer 3,4, 5 etc
Customers' customer	Same Diff			
Suppliers	Same Diff			
Technical and direct connection to exist. customer	Yes No			
Geographical coverage	Area 1,2,3, etc			
Demand fluctuation	Hig/low			
Product characteristics	Same/ diff			
Marketing strategy/ customer philosophy	same/ diff			
Logistics strategy/ Postponem/ spec.	Same/ Diff			
Degree of outsourcing	High/ low			

Figure 4: Profiles of different customers for customer coordination

To what extent can we combine similarities in certain dimensions with complementarities in other dimensions?

Which dimensions of highest importance for the coordination between customers? In the short run it will be the physical dimensions since these are the first ones mentioned by TPL. However, in the long run the strategic dimensions will probably play a more important role. Over time it will be increasingly difficult to coordinate customers with totally different strategies and cultures. A cost hunter and a customer develop have totally different attitudes towards the service and the prices they are prepared to pay.

*Relationship development and integration over time*

Many of the different ways to coordinate actually imply that customers have developed trust for the TPL. Without trust TPL would be very restricted in their way to coordinate customers activities. Especially in the cases based on competitors coordinating or supplier- buyer coordinating. To protect spill over of sensitive information between customers TPL often have strict rules of behavior. However, trust is the key to such coordination between customers and the customers' customers.

This development would be mostly gradual which implies that TPL have time to show that they are trustworthy over time. In earlier studies it is shown that the number of activities that TPL are performing for their customers normally will increase over time. (Bagchi & Virum, 1998) Thereby the activities to be coordinated would increase and customers outsource more activities to TPL over time. To large extent this was also true here. But we also found that others rather decided to decrease the degree of integration.

The reason for this seemed to be that firms are not really conscious about the effects of outsourcing to TPL and will therefore might change as the effects show. Internal conflicts between department in an organisation are often present when firms outsource. This might cause firms to change as the power shifts in the customer firm. Another highly likely alternative is that firms redefine their core businesses and change their attitudes towards logistics seem to be subject to change as well. In other cases the reasons for using TPL are that they are fast growing and/or lack competence in the logistics field. Small and medium sized firms seem to be highly represented here. As the firm grows it might realize the importance of controlling the logistics activities to a larger extent itself.

Other quite common changes that might cause the customers to change their logistics strategy totally would be alliances, acquisitions and mergers. This will change the profiles for coordination of the customers and thus the possibility to create effectiveness and efficiency.

How will this change the possibility to coordinate ? This is something that the TPL will have to work on constantly.

#### *Summarizing the concluding discussion*

Coordination between customers is vital for the TPL. But equally important seem to be to coordinate their customers' customer and other parts of the customers network. The type of coordination used are mainly physical and based on similarities rather than complementarities. Similarities in customers' customer, in products, in geographical coverage and marketing strategy are the most important ones. These connect directly to the more theoretical dimensions stressing the importance of volumes, time and location. Based on the similarities TPL gain economies of scale and scope and develop specialized skills and a deeper knowledge in specific areas. This can be a base for specialization and the formation of a niche which was the case for some of the firms.

Complementarity in the dimensions are less frequently used. The dimensions where complementarity was important were direct connection between customers i.e. supplier and buyer, different demand fluctuation and different product characteristics, customers' outsourcing policies and logistics strategies. These stress the dimensions of

location, sequence and time. Often complementarity makes it possible to share the same TPL resources but in sequence or different in time.

In the case of the strategic dimensions are often a mixture of the coordination based on similarity and complementarity. One important dimensions that is a result of both logistics and marketing strategy is the attitudes by the personnel in TPL towards customer, their products and customers' customers.

Even though the strategic dimensions are also very important but TPL do not seem to be as conscious of its effects on the business. However, if TPL makes the wrong decision and take on a customer with a strategy that does not fit the TPL organisation, it can actually be very expensive since dissolving integrated relationships is difficult and time- demanding.

This brings up the question if TPLs own market strategy should match the strategy of the customers? Can a cost hunter perform services for a customer developer or the other way around and still have satisfied customers and a profitable business? Prices of a TPL with customer developer strategy might indirectly leave out some cost hunters with speculation strategies.

Finally, how is the relationship to the customers developing? We know that trust is an important factor for the coordination between customers. Especially in the cases when customers are competitors and use the same TPL. The problem for TPL is to handle the sensitive information without leaking. In other cases customers have the same TPL and are connected in that way , which also might lead to complication of delicate character regarding business secrets such as costs, prices, suppliers, etc.

For the effectiveness of TPL it is also important to know how the network of the customers fit. These networks are constantly changing as result of relationships development over time, formation of new alliances, acquisitions and mergers. Therefore TPL has to adapt and rearrange the coordination between the customer over time.

### **Concluding remarks and continued research**

TPLindustry is a new and fast growing business which offers many different services and alternative solutions. In spite of the fact that customer coordination is vital for TPLs competitive advantage much of the coordination is actually analysed after the customer agreement is written and the prices set. Many dimensions are not actually taken into account by TPL when taking on a new customer or marketing its services to customers. Others have to be developed over time as the relationships and activities performed change.

The way the logistics firms manage to coordinate and select their customers as well as integrate their different logistics solutions is basic not only for their own but often also their customers' and sometimes even for their customers'customer survival. Since

coordination between customers are vital for effectiveness it should be of interest to customers to take the existing customers of the TPL into consideration in the selection process.

Complementary questions are to what extent are the customers actually aware of the need to coordinate different customers solutions in order for TPL to be effective and how will this affect marketing and sales of TPL?

Much more research has to be done on how TPL create their competitive advantage over time. Some of the dimensions for customer coordination might be more important in short term and others in the long term. Another question of interest might be how TPL can help to integrate a whole supply chain by taking on several firms in the chain as customers. How should the marketing and sales functions of TPL take the coordination into account?

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