Public/Private Collaboration in Logistics: An Exploratory Case Study

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Traditionally, partnerships in logistics are created between actors in a supply chain. Occasionally, the scope of partnerships has expanded to include public/private partnerships in structures best described as networks. This article illustrates empirical results from exploratory case studies of regional logistics networks consisting of multisectoral participation, a phenomenon that is unfamiliar to the general practitioner of logistics. It illustrates capabilities developed by public and private actors in regional logistics networks and aspects of strategic processes. The results indicate that logistics capabilities generated in regional public/private partnerships contribute to the competitiveness of firms and improve public institutions' planning and design processes. The diversity of strategic focus in the case of composition substantiates that strategic capabilities can be developed in many ways and at many layers in the logistics system. Collaborating in a multisectoral structure, however, puts great challenges on both public and private actors due to diversification of roles. The results shows that in order to develop logistics capabilities in a public/private context, the union between the development of strategic goals/objectives and the status of relationships between actors must be reciprocal in character through the elements of trust and affinity.

Introduction

The purpose of this article is to identify and analyse strategic capabilities developed by public and private actors in regional logistics networks. Motives behind public/private partnerships in regional logistics networks are the point of departure in this article.

Many researchers and practitioners have called attention to changes in logistics, derived from trends in the business environment such as globalisation, production patterns (Búrca, 1997; Das & Handfield, 1997; O'Donnel, 1997), and urbanisation (Scott & Storper, 2003).

Barry, Bradley, and Duggan (1997) and Kotler, Splund, Rein, and Haider (1999) state that business activities in peripheral regions have decreased significantly due to these trends. As a consequence, material flows in peripheral regions have decreased, challenging the transportation system and the logistics effectiveness and competitiveness of firms in the region (McKinnon, 1997).

Opportunities for re-establishing the logistics attractiveness of peripheral regions and the competitiveness of local firms must be realised, and at the same time, sustainability must be ensured. Actions in infrastructure are often too expensive or untenable in a long-term perspective (Bergqvist & Pruth, 2003; Hansen, 2002). How, then, can the effectiveness of the transportation system and the logistics attractiveness of the region be improved?

One might wait for direct solutions based on significant technological breakthroughs in the field of alternative energy sources or improved engine performance. While these are being developed, other, more indirect, measures might be useful for improving the transportation system. Increased utilisation of transportation resources, coordination and consolidation of material flows, and increased use of environmentally friendly modes of transport are examples of such indirect measures. Different actors in society could combine their complementary and common interests and engage in joint actions in collaborative structures such as networks. A possible advantage associated with a peripheral situation originating from a general need for innovation and competitive measures is the feeling of affinity and the willingness to communicate. This may open up a much more realistic possibility of multisectoral collaboration. Public and private actors can thus make use of the very aspects that challenge regions; hence, peripheral location can be viewed as an opportunity for developing collaborative capabilities that strengthen the regional logistics systems (e.g., Hansen, 2002).

Networking can allow actors to specialise while realising economies of scale and scope through economic networking and high quality of communication and learning (Casson, 1991; Rosmalen, 1993). Taking a resource-based view, actors in a network with high levels of trade and interactions can be said to enjoy *network capabilities* (Foss, 1999). Other terms relevant in this context are *external resources* (Håkansson, 1993), *externalities* (Kamann, 1993), *agglomeration effects* (Tomaney & Pike, 1997), and *synergism* (Juga, 1996).

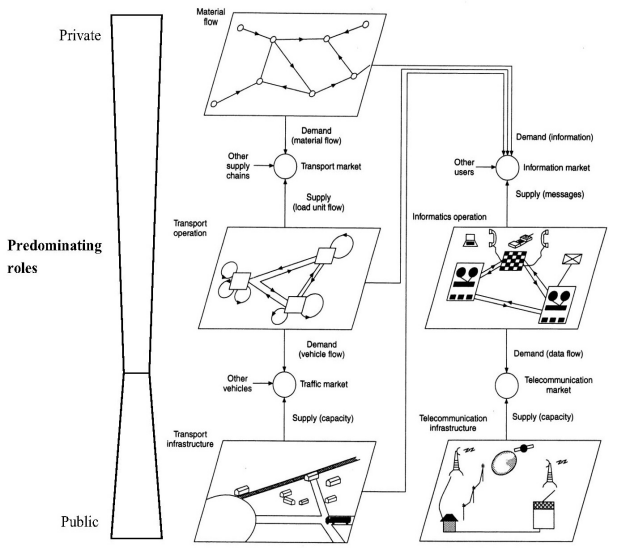
At a micro perspective, private actors often face uncertainties about market developments or related technological matters. Networks, or forms of collaboration between private actors themselves, or between private and public actors, can help in dealing with, and surmounting, these uncertainties (Búrca, 1997; Håkansson, 1993; Juga, 1996; Oerlemans, Dagevos, & Boekema, 1993; Rosmalen, 1993; Storper, 1997). Uncertainty of each other's behaviours can be minimised through collaboration and communication. Risks may be shared and opportunities mutually exploited, contributing to the decrease of uncertainty. Hence, network capabilities render actors competitive relative to actors outside the network. With nothing indicating the opposite; networking on regional logistics issues should apply to the same logic.

Public actors often face challenges in structural planning and design due to the difficulty of prioritising between options and determining the outcome of a specific investment or action. Private actors are quite skilful and precise in their planning processes; however, their planning horizon is often short in relation to what public actors are used to. In general, private actors may contribute with a precise and direct vision, ensuring competitiveness, and public actors may contribute with sustainability through the scope of considerations and the long-term planning horizon. Collaboration between actors can facilitate and improve the planning process by means of sharing knowledge and experiences.
Hence, to solve regional logistics problems, we suggest networks of logistics cooperation between public and private actors where joint capabilities can be developed and exploited. To support this suggestion, the next section deals with the elements that constitute a logistics system and the roles associated with public and private actors.

Research Settings

A regional logistics system has many similarities to traditional firm-based logistics systems. Material flows are described based on the same variables of size, time, and place. The regional logistics system, however, is an aggregation of the individual firm-based logistics systems in the region and the system-actors concerned. A regional logistics system includes a diversity of decision makers, making both infrastructure and logistics market conditions important parts of the system. Based on the complexity and diversity of roles, the Organisation for Economic Co-operation and Development (OECD) (1992) conceptualisation of a logistics system appears eligible. This model describes the transportation system as consisting of five layers: material flow, transport operation, information operation, transport infrastructure, and telecommunication infrastructure. The model has been used by such researchers as Hansen (2002) and Wandel and Ruijgrok (1993) as a framework for analysing logistics structures and functions. The layers in the model interact and are the prerequisites for any modern transport movement. In short, the material flow is consolidated into goods flows and operated by

Figure 1
The five-layer model of a transportation system.



Source. Adapted from Organisation for Economic Co-operation and Development (1992).

appropriate means of transportation. Transport operations and logistics services generate a vehicle flow that requires infrastructure capacity to realise movement, an interconnection realised at the traffic market. The coordination and the operation of material flows are supported by information exchange based on telecommunication infrastructure.

According to McKinnon (1998), there are private interests at four primary levels: logistics structures, patterns of trading links, scheduling of product flows, and management of transport resources. Private organisations traditionally focus on the layers of material flows and transport operation. The division of roles between private and public actors is more or less self-evident: Private markets generate competition and efficiency at the layers of material flow and transport operation, and the public sector can best manage infrastructure due to the scope and scale of investments and responsibilities. There are, however, examples of public organisations conducting transport operations. Postal services, for instance, usually are managed by public actors that operate at the layer of transport operation. Besides such exceptions, a generalised interface between the private and the public sectors can be identified, today characterised at the traffic market.

Close cooperation between private and public actors in the logistics system would improve the match between layers in the logistics system. Infrastructure would correspond better to private needs and market development. Private actors could benefit from public actors' involvement in transport operations through the latter's long-term planning horizon and social considerations. In a logistics context, regional public

actors are becoming more involved, and they participate in the logistics system to a greater extent than before (Bergqvist & Pruth, 2003 Hansen, 2002), often at layers where private actors predominate. Regional actors are beginning to become aware of the fact that a higher level of logistics costs for firms in "distance-challenged" locations is an incentive for relocation. Based on the changing competitive situation, especially for peripheral regions, it is likely that amalgamation in logistics networks by regional public and private actors will continue to increase, generating a shift of interface and giving rise to new opportunities for improvements in the logistics system. The next section discusses suitable arenas and structures for logistics collaboration.

Suitable Arenas for Logistics Cooperation

Instead of transportation being perceived as a generic infrastructure in a region, it can be viewed as a specific and collective resource, a capability constituting a competitive advantage (Foss, 1999; Håkansson, 1993; Hansen, 2002). Specific resources are developed when actors collaborate, communicate, and cooperate. Network structures facilitate the creation of such collaborative recourses. In this article, we refer to a network as "a mechanism to coordinate cooperative action" (cf. Godfroij, 1993, p. 90). Specific and common knowledge developed in a collaborative context is difficult to imitate and should be treated as a capability and a regional asset (Foss, 1999; Håkansson, 1993; Hansen, 2002; Kamann, 1993; Lorenzen, 2003). This resource-based view on transportation has important implications for policymakers, according to Hansen (2002). Regional advantages and capabilities developed through collaboration are less directed to physical infrastructure, which is generic and more in line with unique strategic capabilities. Traditionally, policymakers tend to consider infrastructure investments as leverage for economic activity and disregard the competitive opportunities of developing strategic capabilities at the public/private interface.

Research Question

As some researchers have showed, logistics cooperation (Gadde, Håkansson, & Harrison, 2002; Hansen, 2002) and regional cooperation (Kamann, 1993) between public and private actors can be opportunities for improvements. Others (Håkansson & Snehota, 2000; Meeus & Oerlemans, 1993; Ostgaard & Birley, 1994) have observed the shortcomings of existing research concerning logistics networks that focus on transport operations through collaborative mechanisms. According to Hansen (2002), regional logistics networks have been sparsely studied and analysed. This article concerns existing networks of regional collaboration that provide an arena where public and private actors in the logistics system can interact and exploit cooperative benefits. Based on the importance and relevance observed by other researchers, combined with the scarcity of empirical studies, this article addresses the following research question:

From a strategic capability development perspective, what aspects can be considered as important in a public/private collaborative context?

Strategic capabilities are defined as identified capabilities that facilitate the logistics competitiveness of actors and the attractiveness of regions. The research question considers the outcome of collaboration and the need for exploratory descriptions. Furthermore, it concerns issues linked to the process of strategic capability development, with special attention to the collaboration between public and private actors.

Methodology and Case Study Selection

Considering the complexity of logistics co-operation and our wish to gain an in-depth understanding of networks of logistics collaboration, we decided to use an exploratory approach and a qualitative method, following the thoughts of Lechner and Dowling (2003), Meeus and Oerlemans (1993), Kamann (1993), Zuurbier (1993), and Johanson and Mattson (1993). In consistency with Yin (1984), the case study approach was considered suitable for exploratory studies with the aim of developing new knowledge and frameworks of contemporary phenomena.

The tool for identifying relevant cases in this study is best described as a "snowball technique" (Churchill, 1995). The first source of case identification was research describing good logistical locations in Scandinavia, primarily in Sweden (e.g., Inköp & Logistik, 2001). Scandinavia was believed to have a high frequency of peripheral regions combined with a relatively open communication between public and private actors. Furthermore, the situation in Scandinavia is not unique; countless regions within the European Union and elsewhere global struggle with the same problem, inflicted by geography or demography.

A total of 25 regional networks with the aim of improving the logistics system were identified and prestudied. After the prestudy, the most prominent cases were subjected to in-depth qualitative investigation. These constitute the empirical material in this article. All cases are located in Scandinavia, and thus it was possible to conduct site visits. The cases in the primary case study are divided into two categories, *Main cases and Illustrative case.*

The main cases have both private and public actors involved. The group contains four cases. One of the cases no longer exists because it was terminated; however, this case provides an opportunity for comparison between successful and unsuccessful strategic processes.

The illustrative case constitutes an innovative and prominent example from a strategic process perspective based on commercial solutions. Because the case has a low degree of multisectoral participation, it was not included as ones of the main cases. The element of a successful strategic process combined with a formal

Figure 2
Geographic location of cases.

network arrangement and high degree of information exchange was perceived as a valuable input to the research setting and analysis. This case broadens the context of regional logistics networks by serving as an illustrative example of commercially successful strategic processes realised through cooperative actions and communication of what is usually believed to be sensitive information.

Composition of the Case Study

The main cases illustrate regional logistics networks based on public and private partnerships. They are OneDoor, The Gateway, DTC, and SME-Logistics. The illustrative case, Delego, illustrates networks with successful and innovative strategic processes but lacking an active multisectoral participation,

This research describes and analyses strategic processes in regional logistics networks consisting of private and public partnerships. In consistency with the collaborative framework developed by Chrislip (2002), case descriptions will be structured according three aspects: setting up, working together, and moving to action.

Main cases

OneDoor

Setting Up

The Nässjö region has about 30.000 inhabitants and is located in the central parts of southern Sweden. The inland location makes direct sea access impossible; however, the infrastructure for road and rail transportation services is well developed. The largest nearby city is Jönköping, located about 30 km northwest of Nässjö. Jönköping has direct road connections to the European road network, through the European highway No. 4. The region is famous for its "spirit of enterprising". The OneDoor network was initiated in the late 1990s in the Nässjö region and has attracted both domestic and international interest. The European Union, regional governments, and banks are the main financiers of the network. The regional government is a 5% shareholder of OneDoor; the other 95% is owned by private companies in the region. "One-stop shopping" is the basic idea behind OneDoor, from a business establishment perspective. The primary aim is to attract businesses by facilitating the establishment processes; however, the services offered also have proven valuable for existing businesses. The establishment process in the region was perceived as disadvantageous compared with that of other regions, and this was the main incentive for the development of OneDoor.

Working Together

Regional anchorage was especially evident in the development of OneDoor. The management of OneDoor visited many of the firms in the region before establishing the network and deciding on strategy. According to the management of OneDoor, these visits laid an important foundation for gaining the trust of and building relationships with actors in the region, something that the management team believed was vital for strategic achievements. The strategy is based on and structured around services. Furthermore, it was important that services should utilise regional capabilities without driving private service providers out of business, and the services should be demanded by both existing and potential businesses. Services offered are unique for the region and categories: provision of risk capital, guidance, and recruitment. Advice on available construction land, potential regional partners, and legal aspects is a core service. Contacts with potential financiers, such as banks, institutions, and miscellaneous funds, facilitate financial activities concerning establishing small and medium-sized companies. Addressing capital and ownership issues concerning business establishments is a unique service in the scope of regional logistics networks in Scandinavia. To make competence and expertise available at the local level, the network has established a "competence bank", including both private and public actors. The competence bank consists of about 70 persons and organisations that are committed to respond when requested by the actors. This is an excellent example of how public and private interest and roles can be utilised. Many of the common issues can be communicated through this network in an informal way, thus facilitating information sharing between sectors and actors.

Since 2003, the network has been involved in joint research with Jönköping International Business School. The research is devoted to the analysis of regional

logistics issues in the region. To facilitate recruitment in the field of logistics, the network has established cooperation with the local employment office.

Moving to Action

After years of project planning and cooperation in the region, a transportation terminal is now being erected. The terminal offers state-of-the-art handling equipment together with direct rail and road connections. Copenhagen, Malmö, and Stockholm can be reached by rail within about 2 hours. The land surrounding the terminal is earmarked for logistics purposes. This, combined with access to the terminal, is intended to offer modern and cost-efficient transportation services to prospective establishers in logistics. The latest establishment, in 2005, was a logistics facility by Rusta. Rusta sells building material and has an annual turnover of €160 million. The establishment is estimated to have generated 25 job opportunities in the region.

The cooperation with Jönköping International Business School is intended to produce a number of graduate student and doctoral theses concerning the logistics sector in Nässjö. Since 1997, the network has been responsible for the recruitment of a 12-month trainee programme, developed together with three manufacturing companies in the region in cooperation with public education institutions. The main educational focus is logistics and manufacturing, and the participants are involved in three different projects and companies. A large number of students have completed the programme and are now working in the field of logistics.

The Gateway

Setting Up

The Gateway operates in the Eskilstuna region, where the network enjoys its geographical advantage from a logistics perspective, its central position in relation to major goods flows in Sweden. The region has not been able to attract logistics companies to the extent desired by regional government. Based on findings from a logistics flow investigation in 2001, private actors in the regions initiated the establishment of The Gateway in close collaboration with public actors. Experiences from the investigation resulted in five prioritised areas: localisation issues, infrastructure, labour, competence, and marketing.

Working Together

The prioritised areas are addressed and developed for the parties concerned through means of cooperation. Joint educational programs, benchmarking between actors, and frequent brainstorming meetings are the most prominent activities. The network is "members only", and each member is paying an annual fee of €140. In 2003, less than 2 years after initiation, the number of members reached 40, and more members are expected to join the network. The commercial foundation was emphasised as an important factor by one public actor. Concerning the different roles of public and private actors, the infrastructural planner at the municipality stated:

The municipality sees strength in the fact that the network is managed on a commercial level. . . . Firms meet at each other's facilities and present their businesses; altogether a foundation for communication. . . . The role of the municipality is to create the necessary conditions for networking.

The infrastructural planner in this discussion meant that the role of the public actors was mainly to initiate collaboration and, when commercially valid, take more of a passive role. The passive role of the public actor is reflected by its participation almost completely at the board level rather than elsewhere in the organisation. The Gateway's board consists of a regional representation of firms, regional government, and educational and research institutions. The manager of The Gateway describes the difference in roles between the network and the public actors as follows:

The division is quite clear: The municipality wants to attract as many companies as possible. We, the network, want to be prepared. Besides, we act as a sounding board serving the municipality of desirable or lacking potential business establishments.

The manager of The Gateway clearly defines the public actor, in this case the municipality, as an external party to the network. The network here is described to be a service to the public actors, a sounding board. The manager describes the network as a steering committee that formulates proposals that later are supposed to be executed by the public actor.

Moving to Action

The network offers courses and programmes within logistics, available for members. The network has launched a Web site aiming at communicating information and soon will have a "chat room" for continuous exchange of knowledge between members. Membership meetings are arranged every sixth week at the location of a member company. At these meetings, state-of-the-art logistics solutions are presented and discussed. Future plans include the development of an industrial area with good infrastructural connections to the European highway network, via E20, as well as the national rail network. When asked about strategic achievements and benefits for actors, the manager of the network stated:

The main advantages are created for small actors. Large actors also enjoy advantages, however, in comparison

not as substantial. The largest benefits are created for small actors, since they have access to competences and solutions that otherwise are inaccessible.

It is obvious that this manager has a fairly short-term perspective in terms of the benefits available, and competences and technology-driven solutions are perceived as the main capabilities. There is a possible problem if network synergisms are not developed for large actors, because participation obviously is the cornerstone of the benefits enjoyed by small actors.

DTC

Setting Up

Denmark's Transport Centre, henceforth called DTC, is a physically resource-intense centre characterised by its terminal structure. The centre spreads out on 32 acres. The Danish association of road haulers took the initiative in creating the centre in 1987, believing that there was a need for a strategically located terminal. The terminal is located on the eastern part of the Jutland Peninsula. Investigations showed that a strategically located transportation centre would enhance the competitiveness of Danish road haulers. Public actors tend to be initiators, and DTC is no exception. The initial financial capital was €29 million, raised by banks, institutions, pension funds, and a few companies.

Working Together

The centre offers logistics services to road transportation firms, including packaging, labeling, storage, and administration. The terminal enhances the competitiveness of Danish road haulers by facilitating consolidation, coordination, and cross-docking of goods. Recently, competence building has been added to the aims and is based on educational programs offered at the centre and developed in cooperation with public actors. The company does not have very high dependencies, nor does it have a very commitment-intense cooperation process. DTC has a business structure that generates low dependencies that require only "arm's length" relations with customers. Proceeds come mainly from payments from customers and from rent, handling, storage, restaurant, motel, and educational fees.

Moving to Action

The services and the location of the centre have contributed to efficient transport movements by Danish haulers and have significantly improved the lorry drivers' work situation. The centre will soon gain ISO 9000 accreditation. Through the offered education on logistics and transport, workers within logistics have increased their knowledge and awareness concerning issues such as enterprise resource planning, material flow optimisation, transportation, and issues of environmental impact. DTC is today an attractive location for forwarding agencies, haulers, goods managers, wholesalers, and others. In 2004, the centre had 38 full-time renters of storage and/or offices and users of services.

SME-Logistics

Setting Up

SME-Logistics was established in 1995; however, actors in the network had started a cooperation experiment in 1993. Public actors supported the organisation at an early stage, before private actors showed any interest. In 2000, the network consisted of 27 companies that cooperated on joint external transport solutions. According to the manager, at that time it took about 2-3 years to establish credibility enough for actors to commit at the necessary level. SME-Logistics is one of the most ambitious projects for implementing functions for coordinating material flows in Scandinavia. The main reason behind this project, according to a previous manager of SME-Logistics, was the serious regional shortcomings, especially the unfavourable logistics location of the region, which resulted in an urgent need for consolidation of material flows to reduce transportation costs.

Working Together

The strategic focus was established in 1996, with the basic idea of synchronising and consolidating material flows of small and medium-sized enterprises with those of large enterprises. The network members formulated the goals as follows:

To strengthen long-term competitiveness, growth abilities, and profitability through means of coordinating outbound transports, increased logistics competences, accessibility to networks, and logistical methods. The network shall work within three main areas: analyses and actions for single or groups of firms, networking, and education. (translated from Uhlin, Nordregio & Nordlandsforskning, 2002, p. 155).

Initially, the strategic focus was on coordination and consolidation of material flows in and between the Kramfors (Upper Sweden) and Eskilstuna (Central Sweden) regions. After about 3 years, the network expanded to include actors from three more regions. Coordination of material flows was realised through information exchange between actors, without any additional terminal handling.

Moving to Action

At best; single firms experienced up to 50% cost reductions in transportation and logistics. Financially, the network was supported by the public sector during

this period. The network was terminated in 2000-2001 due to financial difficulties; however, some of the functions that were previously operated by the network are now handled commercially and managed by the network's previous manager. The functions still offered are focused mainly on consultancy services and building of competence and knowledge in the form of educational programs and courses. During its lifetime, the network contributed to a number of new businesses being established.

Illustrative case

Delego

Setting Up

The company was established in 1999, and by the year 2003, it had an annual turnover of €2.7 million. Before starting Delego, the founders had their own carrier service for 16 years. They got the business idea when they became aware of the low utilisation rate of vehicles in the industry.

Delego coordinates material flows for individual firms and focuses on improving the efficiency of the transportation system through means of enhancing the match between information operations and transport operations. This is accomplished through communication and brokerage of idle capacity. The exchange is virtually managed on a Web-based platform. The main source of proceeds consists of a brokerage fee, billed when a match between demand and idle capacity is realised. The company defines the services as follows:

Delego.com provides a valuable service by minimising idle carrier capacity with Internet based solutions that streamline the communication and administration process. An advanced database and modern communication facilities allow Delego.com to match shippers and carriers in real-time, while guaranteeing delivery at competitive rates. (From http://www.delego.com/corporate/UK/index.asp?]

Working Together

Delego's strategy is to develop local markets through organic growth or franchising. Each local marketplace is connected to other local markets, with the aim of developing a European system with good coverage. The initial market was Sweden, but in 2002, the company expanded into Spain through contracts of license.

Delego's objectives and services are based on functions of capacity planning, route planning, intelligent dispatching, track and trace, invoicing, controlling, and analysis. From a commitment point of view, customer relations are very formal and best described as "arm's length" relationships. Delego overcomes the problem of trust-building through institutional arrangements, formal routines, and procedures. Relations are handled by interfaces such as Electronic-Data-Interchange (EDI) and through the use of individual Internet entries, which enables planning and integration with Enterprise-Resource-Planning systems, all managed automatically. There is no entrance fee for customers. Instead, there is a marginal price system when a match is made on the spot market. There is always a minimum fee of 50 on each spot market match.

Moving to Action

The company won the "environmental innovation 2001" award for the utilisation of empty carrier capacity. In 2003, the information system included 280 carriers and about 7.000 transport vehicles. In case of match on Delego's spot market, customers can enjoy, on average, a 35% reduction compared with ordinary carrier prices. To respond to customer demands, Delego initiated a service to enable international transport to and from Sweden, aiming at expanding the business through organic growth and/or licensing.

Aspects of Strategic Capability Development in a Public/Private Context and Some Hypotheses

This section discusses and analyses empirical characteristics presented in the case studies. It is divided into subsections, where distinguishing aspects are discussed. To consolidate the discussion, attempts are made to formulate hypotheses.

Public/Private Perspectives on Goals

Strategies concerning logistics systems have different time perspectives depending on the affected layers. Physical infrastructure has a long planning horizon and is mainly a public responsibility. Transport operations have a shorter planning horizon and depend on the pace of innovation and structural changes initiated by shippers. The most fluctuating layer is material flow. Material flows vary with changing market conditions, production planning, and distribution system designs. Furthermore, public actors serve socioeconomic purposes, which result in a slightly different perspective on goals compared with private actors, which focus on shareholder value.

The different planning horizons give actors in multisectoral networks different focuses on time and expectations of direct benefits from partnering. For long-term support from actors to be achieved, actors must feel that participation gives expected benefits. Explicit benefits are crucial in the strategic process if actors' participation shall continue. Therefore, it is important to connect the strategic focus with a collaboration process that combines actors' demand for direct benefits and time perspectives, balanced with actors' contribution to the network. The aspect of time perspectives and actors' expected benefits from participation are summarised in the following hypothesis:

Hypothesis 1: The process of identifying strategic goals is best managed dynamically when actors have the ability to balance their own contribution and time perspective with expected benefits.

Characteristic of OneDoor is management's ability to keep network actors interested, attracted, and fascinated through the renewal of activities and services offered by the network. This indicates that a continuous and dynamic strategic process facilitates development of activities with concrete aims and benefits, essential for keeping the network "alive" and making the collaboration process a "living organism". Regeneration sustains network actors' interest and participation. Dynamics between actors are achievable only through collaboration by means of communicating and sharing information. The next section is devoted to the aspects of communication and information exchange.

Communication and Information Exchange

There are two levels of communication; within the network and in the institutional environment (cf. Lorenzen, 2002). Communication within networks relies on formalised procedures that facilitate communication and spontaneous and constructive discussions. Characteristic of the main cases is the development of an institutional environment that advocates openness and outspokenness, thus generating a platform for building a mutual and common understanding. Contacts and communication frequently are boosted without anything required from the network arrangements, a warrant for healthy partnering.

Communication takes place in channels. Today, the ability to exchange large quantities of information in an efficient manner is vast due to technologies such as e-mail and EDI. The logistics sector has not delayed in implementing communication techniques. The field of logistics has benefited enormously by the techniques developed; consequently, communication is easy, efficient, and effective. The Gateway is an empirical example where modern techniques have been utilised for the facilitation of information exchange. The establishment of a "chat feature" enables actors to communicate at will and with ensured secrecy. Secrecy is an important element of trust, crucial for exchange of tactical, strategic, and operational information. In the case of DTC, interfaces such as EDI/XML and the use of individual Internet entries allows automatic information exchange through the integration with Enterprise Resource Planning systems (ERP) systems. As a result of information exchange, actors in supply chains have been able to approach each other in ways that revolutionised the field of logistics by erasing company boundaries (cf. Håkansson & Snehota, 1989). In summary:

Hypothesis 2: Communication and information exchange facilitate the establishment of a common platform between actors.

This hypothesis establishes a connection between a common platform for collaboration and information exchange and communication. The order of words does not mean that it is a one-way connection, as observed by others (e.g., Bowersox, 1990; Fukuyama, 1995; Lorenzen, 2002). Thus, communication and frequent exchange of tactical, strategic, and operational information are an indication of the level of collaboration.

A probable reason why SME-Logistics was unsuccessful was management's inability to communicate goals to actors, resulting in a trade-off difficulty for actors when balancing dependency and freedom. If the network has aims and strategies, clearly agreed upon by network actors, their willingness to forgo some levels of freedom is likely to increase. Another reason why management at SME-Logistics had difficulties communicating goals was the composition of the management team, which lacked multisectoral participation. Because the strategies of SME-Logistics to a great extent required multisectoral actions, a multisectoral composition of management would have given the network more legitimacy.

Besides depending on communication and information exchange, actors' willingness to collaborate also depends on the confidence in information and the way it is used, as noticed by Chrislip (2002).Without credibility, no information is trustworthy, and the willingness to commit decreases, impairing collaboration. The next section deals with the elements of commitment and trust.

Commitment and Trust

The ability to develop strategic capabilities and the probability of strategic achievements depend upon how well the network and its actors can unite, commit, and co-operate (i.e., the status of relations), or as Håkansson and Snehota (1989) formulate it:

Continuous interaction with other parties constituting the context with which the organisation interacts, endows the organisation meaning and a role. (p. 300)

Empirical findings indicate that the level and status of relationships constitute important prerequisites for strategic processes in network contexts. Public and private actors in OneDoor and The Gateway have been able to combine complementary interests and develop common actions (e.g., deposit earmarked land for logistics facilities and activities).

Close forms of commitment between actors in networks result in a development of in-depth relations, necessary to achieve commonly agreed strategic goals and, in the end, overcome regional shortcomings. If the network's strategic focus requires only shallow commitment, then "arm's length" relationships are sufficient. The choice of strategic focus generates dependencies to which the level of commitment must correspond (cf. Kamann, 1993)[1].

1. According to Kamann (1993, p.117), quoting Wheelan and Hunger (1990, p. 5), strategic behavior results from strategic decisions. Wheelan and Hunger argue that decisions that devote substantial resources also demand a great deal of commitment.

For SME-Logistics, this level of commitment was not fulfilled; the level of commitment did not correspond to the strategic focus. When one relationship was affected, it spread quickly and strained others. What triggered this development is uncertain; however, formalising the network arrangement is one attempt to make the network resistant against such situations. Delego solves the problem of trust-building through institutional arrangements and its formal routines and procedures. Relations are managed by interfaces like EDI/XML. Formal network arrangements, however, may affect actors' willingness to commit to strategic goals because of legal ties and the necessity to forgo some levels of freedom.

To sum up, a hypothesis concerning commitments can be formulated:

Hypothesis 3: Commitments are strongly positively associated with trust and affinity.

Substantial research (Fukuyama, 1995; Gambretta, 1988; Ring & Van de Ven, 1992) supports this hypothesis by demonstrating that high levels of trust increase people's willingness to engage in cooperative interactions. From the case study, it is evident that trust and relationships are highly correlated, from the analogy that intense relationships can be achieved only when mutual trust and affinity exist.

It is evident from many of the cases that strategic choices with sophisticated logistics functions require investments and resources, intense information exchange, and structural change by actors. As a consequence, they build strong network ties and dependencies. Without sufficient commitments when needed, dependencies will be undermined and impair the strategic process. What, then, is needed in order for actors to commit at the necessary level through the choice of strategy?

From the cases, we observed that actors' willingness to engage themselves in relationships was a result of trust and acceptance towards other actors and the network management. For SME-Logistics, the process of developing trust was regarded as critical by network managers before realising strategic aims; however, this process was more time-consuming than expected.

Another possible reason why trust-building progressed slowly in SME-Logistics was the limited involvement by the public sector. Public actors, through their broader perspective, widen the institutional environment and develop credibility. In the case of OneDoor and its higher level of public-actor involvement, the trust-building process progressed much faster.

In a networking environment, individual aspects are important. Actors' previous experiences of cooperation, number of actors in the network, trust and affinity, and loyalty and opportunism are examples of significant individual aspects noticed in the cases that affected the cooperation process profoundly. Empirical examples of individual aspects are OneDoor and The Gateway, which connected their organisations closely with existing networks in the region early on in the development of the networks. The purpose of this, according to top management, was that actors in the existing networks had previous experience and were familiar with partnering. This supports the notion of relations and interactive behaviours as social processes that are individually dependent (cf. Håkansson & Snehota, 1989). A comparison between cases in high-density regions (i.e., DTC) and periphery regions (i.e., The Gateway and OneDoor) indicates that this "familiarity" seems more common and easy to develop in peripheral regions, hence:

Hypothesis 4: Geographical closeness facilitates the development of affinity and trust.

Trust- and affinity-building are especially evident for OneDoor. Management of OneDoor paid a visit to many of the firms in the region before establishing the network and its strategy. According to managers, this visit was an important foundation for gaining trust and building relationships with actors in the region.
The next section offers conclusions as an attempt to integrate the hypotheses discussed in connection with the research question.

Concluding Remarks

Integration of Hypotheses

The aim of regional logistics capability development is to support the competitiveness of actors and the attractiveness of regions. Public/private collaborative settings, supporting this aim, need clear goals and objectives that are shared by the involved actors. The process of identifying goals is best managed when public and private actors can balance their own contributions with expected benefits, as stated in Hypothesis 1. In order to balance, a common platform and perspective are necessary. This common ground for understanding must be supported by a open and frequent communication and information exchange among the regional logistics actors (Hypothesis 2).

To move into action, however, strategic goals and objectives require a certain level of commitment by actors, which can be attained by a relationship development process. Furthermore, Hypothesis 3 establishes the connection that the willingness to commit is strongly connected to actors' affinity and trust. To support the development of trust and affinity, continuous communication and information exchange is a basic requirement. As found in the case studies and stated in Hypothesis 4, geographical closeness can be a facilitator in the construction of affinity and trust. The regional setting should therefore be treated as a strategic opportunity for developing regional logistics capabilities. An integration of the hypotheses can be offered in connection with the research question:

Hypothesis 5: The development of regional logistics capabilities in a public/private context can enhance the

logistics competitiveness of actors and the attractiveness of regions. The regional collaboration must handle the conflicts between companies' competitive situation and the conflict of interest between private and public goals. To develop capabilities in a public/private context, the union between the development of strategic goals/objectives and the level of commitment must be reciprocal in character through the elements of information exchange relying on public and private actors' trust and affinity.

This hypothesis defines a reciprocal connection between level of commitment and the development of strategic goals and objectives. A high level of commitment contributes to the development of ambitious goals and objectives. Furthermore, goals and objectives require a certain level of commitment to be realised. The success of strategic capability development is, thus, dependent on the strength of the reciprocal connection. Information exchange and communication constitute the reciprocal connection. The connection is constructed on the elements of trust and affinity. The regional setting strengthens the connection by establishing a joint geographical identity for actors; hence, peripheral regions have an excellent opportunity to develop affinity and, consequently, a foundation for strategic capability development. The reciprocal connection indicates that the strategic process in regional logistics networks is a recurrent and dynamic process, best supported by stepwise strategic management, where more and more ambitious strategies are introduced gradually in correspondence with the development of trust and affinity.

Further Research Issues

This case study has highlighted the fact that improvements can be made in existing logistics system structures through the strategic capabilities developed by different logistics networks. More important, the study has illustrated that public/private planning and design facilitate the development of strong regional capabilities.

It is the authors' belief that the hypotheses constructed in this article can guide future theory-testing research. Based on the situation for SME-Logistics, interesting research questions arise, such as whether experiences from previous failures affect the ability of successful implementation in the future.

Other important questions remain to be addressed. For example; what barriers exist, regarding attitudes, for public and private actors to engage in networks of regional logistics collaboration? What network structures are available for this type of logistics collaboration? Furthermore, longitudinal studies are required to achieve a nuanced picture of how public/private partnerships in regional logistics networks have evolved over time and how the phases have been incorporated. Based on the regional setting, another interesting aspect arises: How can regions attract business by using logistics capabilities as marketing arguments?

Overall, the authors hope to have stimulated other researchers to examine and investigate networks of logistics collaboration, given that this paper shows that there are opportunities for improvements by partnering. In the field of logistics, the authors' hope that this research has helped in some way to broaden the perspective of logistics networks and involved actors with emphasis on multisectoral participation.

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