Drivers and Obstacles for innovation in Logistics

Case studies in Dutch Logistics

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Summary

The concept of innovation is regarded in most organizations as an effective tool to create and sustain competitive advantages. Firms in today’s volatile business environments need to innovate in order to stay ahead in the market. While a substantial body of literature has examined innovation and organizational learning this study focuses explicitly on the drivers and obstacles for continuous innovation and improvement in the logistics sector.

The logistics function is an area that is increasingly seeking ways of adding value through innovation. It has transformed from the business concept of transportation to that of serving the entire logistical needs of customers. Not only independent logistical firms but also most manufacturing firms become aware of the service aspects of the products they present their clients. The service component offers a very good change of gaining sustainable competitive advantage in the hyper-competitive global market.

To be able to study the phenomenon of innovation in logistics in its natural setting and to gain a better understanding of its nature and complexity, a case-study method was adopted. A research population was composed of 10 logistics firms, selected for their logistics function / capabilities and size, creating a bulk sample of the Dutch logistics sector. The research data was gathered through a series of interviews with managers of the participating firms and observation of the firms’ processes. An additional expert group of four logistics consultancies participated in the study to support the research findings. This exploratory work examines, describes and compares factors that drive and impede innovation in Dutch logistics. Based on the findings of this study we offer directions for future research.

The results of this study create the image of a volatile and competitive sector / function that has traditionally been in a following and supporting role. On the other hand are there all different kinds of indications supporting the theory that logistics are evolving from offering transportation to offering solutions. The research results also suggest that many managers active in the logistics sector lack the relevant knowledge of and experience with innovation, especially in small and medium, often family owned, organizations. The most important limitation of this research is the relatively low external validity of the conclusions caused by the use of a case-study methodology. Additional research is for that reason necessary to validate and extend the research results. The directions for future research include; comparison of the degree of innovativeness of the logistics sectors with other sectors, comparison of the degree of knowledge of innovation within the logistics sector with other sectors and the determination, categorization and classification of the different attitudes towards logistics of different logistics branches/ sectors. Future research is also necessary to study the (longitudinal) effects of implemented collaborative innovation strategies.

The theoretical implications of this study are that it provides new insights in the phenomenon of continuous innovation and improvement in logistics and sets out directions for future research. It specifically adds new knowledge to three areas of limitation in existing literature: obstacles of innovation, collaborative innovation and innovation in logistics. A better understanding of what drives and hampers innovation will offer good opportunities to improve innovation management in the future, giving organizations the change to gain sustainable competitive advantages.
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Introduction

In current times, businesses are experiencing the internationalization of technology-driven competition, globalization of manufacturing, shorter product life-cycles, increasingly sophisticated customer needs and a greater integration of technologies (Shepherd & Ahmed, 2000). There is a constant pressure on firms to innovate in order to create and sustain competitive advantage. Literature provides extensive insight in the chances offered by innovation. Research even shows that innovation is one of the main factors causing the remarkable long-run economic growth within the Netherlands (Baumol 2004).

An area that is increasingly seeking ways of adding value through continuous improvement and innovation is logistics (Soosay & Hyland, 2004). The logistics industry is an example of the erection and development of a vital new service-based industry. It has transformed from the business concept of transportation to that of serving the entire logistical needs of customers. Not only independent logistical firms but also most manufacturing firms need to be aware of the service aspects of the products they present their clients. The service component offers a very good change of gaining sustainable competitive advantage in the hyper-competitive global market. Conversely poor service or a reluctance to innovate offers a fairly good change of losing customers (Chapman, Soosay et al. 2002; Esper et al. 2007).

But even though the combination of innovation and logistics is a very interesting one – from both a scientific and a managerial point of view - there only exists scarce empirical evidence on continuous innovation and continuous improvement in logistics. The existing literature also has several limitations. First, most studies only focus on the factors that stimulate firms to conduct continuous improvement and innovation. Factors that hamper organizations in engaging in innovation and improvement activities have more seldom been the object of study. Second, most researches mainly focus on learning and innovation processes within a single firm, while other literature suggest that there are important advantages to be gained through collaborative innovation; i.e. development of a firms’ knowledge base, fresh insight into strategies, markets and relationships (Mohr & Sengupta, 2002) and better financial performances (Jiang & Li, 2007). Von Hippel summarizes his arguments for collaborative innovation by stating that good relations with suppliers, competitors and clients are a fertile ground for innovation (Von Hippel 1988). More recently Soosay et al have demonstrated that several forms of supply chain cooperation support continuous innovation (Soosay et al 2008). A third limitation of existing research is that it often concentrates on manufacturing environments, many times equating innovation with product innovation. The Soosay and Hyland research studies the drivers of innovation within a logistics environment but limits the logistics sector to distribution centers. Chieh-Yu also studied innovation in logistics but approached the subject from a macro technological point of view (Chieh-Yu 2006)

The aim of this paper is to increase our understanding about the key drivers and obstacles for continuous improvement and innovation in logistics in European firms. A better understanding of what drives and hampers innovation will offer good opportunities to improve innovation management in the future. The objects of study are learning and innovation processes within the single firm as well as in collaboration with other firms. To this end we conducted an exploratory research. The data is collected from ten logistic firms and four consultancies. The data collection involved semi-structured interviews with managers of the logistic firms, interviews with logistics consultants and visits to the logistics firms to observe the operations.
Setting the scene

Innovation and organizational learning

Research literature provides a variety of definitions to describe “innovation”. To give a few examples, Rogers (1997) defines innovation as “an idea, practice or object that is perceived as novel by an individual or other unit of adoption” (Rogers 1997). Tidd et al. (1997) summarized the concept of innovation as “the process of turning opportunities into practical use” (Tidd, Bessant et al. 1997). More closely related to the general accepted idea that innovation is an important factor for firms in gaining sustainable competitive advantage is the definition of innovation given by Wissema (2005), innovation is “the successful introduction of something new. Successful as shown by the acceptance in the market or other use” (Wissema 2005).

Several researchers have tried to study the issue in a normative way only to discover that the topic is too complex to be approached normatively (Pedler, Burgoyne et al. 1991; Argyris 1996). It is for this reason that the literature about innovation shows a widely varied spectrum of research approaches to study the possible attributions of innovation on a widely varied spectrum of improvement areas. Studies have been executed on the (possible) improving influence of innovation on for example:

- Value (Porter 1985)
- Quality of service production and delivery (Parasuraman and Grewal 2000)
- R&D cost-efficiency (Rao 2001)
- Transaction costs (Garicano and Kaplan 2001)
- Productivity, inventory and demand management (Kaplan and Sawhney 2000)
- Increased customisation capabilities (Yingli and Laiwani 2007)
- Supply chain and relationships (Hyland, Soosay et al. 2003; Kaltoft, Boer et al. 2007; Yingli and Laiwani 2007)

But although innovation is a multi-perspective topic it is generally agreed upon that knowledge management and organizational learning are determining factors in innovation (Nonaka and Takeuchi 1995; Johannessen, Dolva et al. 1997; MacDonald 1998). According to Tidd innovation is about generating, capturing, sharing and exploiting knowledge, creating new possibilities through combining different knowledge sets (Tidd 2001). Darroch and McNaughtan proved the often suggested connection between innovation and knowledge (management). They showed that there is a positive and significant relationship between knowledge management and innovation performance (Darroch and McNaughtan 2002). This demonstrated relationship between innovation and knowledge (management) has motivated researchers to approach the concept of innovation from a learning and knowledge point of few. The tight connection between innovation and knowledge (management) can also be found in the later discussed research into drivers and obstacles of innovation. Some examples are the influence of a (learning) culture, the quality, skills and knowledge of personnel and information technology to gather, process and distribute knowledge.

The interest for organizational learning and knowledge management dates back to 1965 to the pioneering work of Cangelosi and Dill (Cangelosi and Dill 1965). In the seventies learning in and learning by organizations became a popular research topic (Argyris and Schon 1978; Jelenik 1979; Hedberg 1981) In the years following the interest kept on growing as can be easily determined by the vast amount of papers, books and even dedicated journals published. Not only the interest of academics for innovation and organizational learning grew rapidly
also more and more practitioners showed their interest in these concepts. They began to consider innovation as a fundamental component of entrepreneurship and a key element of business prosperity (Nonaka & Takeuchi, 1995). Businesses worldwide experienced the internationalization of technology-driven competition, globalization of manufacturing, shorter product life-cycles, increasingly sophisticated customer needs and a greater integration of technologies (Shepherd and Ahmed 2000). Merely producing the same products more efficiently turned out not to be sufficient anymore. To stay ahead in the market business organizations needed and need to innovate to improve their competitiveness (Chapman, Soosay et al. 2002; Soosay and Hyland 2004).

In the nineties of the past millennium the focus of research in innovation and organizational learning was on manufacturing activities. Influenced by the Japanese industrial successes the principles of continuous improvement (CI) found its way to businesses all over the world; i.e. Kanban and quality cycles were introduced in many organizations (Bonvik, Couch et al. 1997; Karaesmen and Dallery 2000; Fullerton and McWatters 2001). More recently however the focus of research on innovation and organizational learning is broadening from solely manufacturing to the entire product-service mix organizations provide.

That this long-lasting interest for organizational learning is a justified one, can amongst others be concluded from the results of Baker & Sinkula (1999) and Panayides (2007) studies on the relationship between organizational learning and (financial) performance (Baker and Sinkula 1999; Panayides 2007). Their research proves that the long suggested and argued positive relationship between organizational learning and a firms (financial) performance is correct. The positive influence of organizational learning applies for organizational learning within a firm (firm-level learning) as well as for organizational learning between firms (alliance-level learning) (Jiang and Li 2007).

In scientific literature on innovation there is a clear distinction between continuous (incremental) innovation and radical innovation. Continuous innovation is the ongoing, step by step form of innovation whereas radical innovation is about major changes as for example the shift from piston aircraft engines to turbojets, the change from steam to diesel electric locomotives and the move from hard-disc memory to semi-conductor memory (Utterback and Kim 1985; McDermott and O'Connor 2002). Incremental innovation is characterized by low market uncertainty and low technological uncertainty. Radical innovation on the other hand is characterized by high market uncertainty and a high technological uncertainty (Lynn and Akgün 2001). The type of innovation used in this research is consistent with the concepts of continuous (incremental) innovation.

**Collaborative Innovation**

Internationalization of markets, increasing complexity of new technologies and increasing speed of innovation are some of today’s market characteristics that make competition hard at the single company level. This situation stimulates the interest of firms for the design and management of interactions among companies (Douma 1997). As a result a wealth of theories on interaction between companies has been developed in the last decade, including fundamental contributions such as transaction cost economics (Coase 1937; Williamson 1973) and network theories (e.g. Håkansson 1989). This wealth of theories also led to a wealth of terminology used to describe the interaction between firms: networks of companies, virtual organizations, customer-supplier collaboration; extended (manufacturing) enterprises, dynamic networks, strategic alliances, and joint ventures are just a few among the interrelated
concepts and terms that have been introduced in the various management theories (Chapman and Corso 2005).

For many firms in many braches is inter-company collaboration in radical innovation a reality. Joint development and co-design are the most typical forms of networking for this type of innovation (Stuart, Deckert et al. 1998; Whipple 2000). In comparison with intra-organizational research and development (R&D) projects, network-based initiatives allow lower (financial) risk and faster access to essential competencies.

Collaboration in small-step innovation (or continuous improvement) of products and processes on the other hand is considerably less common. Although apparently simpler, continuous innovation within a network of companies requires a much deeper integration between companies along the supply chain. The success of such profound integration projects is strongly dependent on issues such as open communication, knowledge sharing, trust and common goals (Stuart, Deckert et al. 1998; Tomkins 2001) Modern technology – especially internet technology- is able to support the extensive exchange of information needed for collaborative innovation. For this incremental type of innovation is the most common form of inter-company interaction customer-supplier collaboration. This form of collaboration consists of customer and supplier(s) working together, over a longer period of time, for the benefit of both (Ring and van de Ven 1992). Kogut (1988) argues that the primary motives for customer–supplier collaboration are enhancing market position, lowering transaction costs and learning from each other (Kogut 1988). Simatupang and Sridharan found that supply chain members who had higher levels of collaboration practices were able to achieve better operational performance and innovation activities (Simatupang and Sridharan 2005). Similarly, Sahay also argued that collaboration enables value creation in supply chain activities (Sahay 2003).

Drivers and obstacles of innovation

Like the whole concept of innovation is a multi-perspective topic, is also the research into the drivers of innovation a multi-dimensional one. It is however generally agreed upon that an increasingly dynamic market, heavy worldwide competition and -strongly related- increasing uncertainty, drive companies to embark on innovative activities. The greater the uncertainties, the greater the need for learning and innovation (Dodgson 1993; Gieskes and van der Heijden 2004).

Most literature on drivers of innovation focuses on manufacturing environments. Also is the concept of innovation in this research area often synonym for product innovation. For example in the large scale CIMA research project. During the Continuous Improvement in Global Product Innovation Management project (CIMA-ESPRIT 26056) several levers that drive innovation in a manufacturing environment were identified from an extensive review of the literature (Boer, Caffyn et al. 2001). The literature review was the first step of this broad project which included 140 innovative projects in 70 different companies. The identified levers are groups of drivers described in general terms and are found both inside and outside organizations.

The CIMA project investigated if the identified levers had a significant positive influence on the learning behaviours of companies. (see Figure 1)
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<table>
<thead>
<tr>
<th>Levers</th>
<th>Research results</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1  Product family strategies.</td>
<td>Rejected</td>
</tr>
<tr>
<td>L2  Innovation process definition.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>L3  Organisational integration mechanisms.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>L4  Human resource management policies.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>L5  Project planning and control.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>L6  Performance measurement.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>L7  Design tools and methods.</td>
<td>Confirmed</td>
</tr>
<tr>
<td>L8  Computer-based technologies.</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

Figure 1. Levers identified in the CIMA project (Boer, Caffyn et al. 2001)

One of the possible explanations why Product Family Strategies is not perceived as a positive enabler of learning behaviours is that it leads to too much of a goal focus. An extreme goal focus can create an environment which leaves no room for learning and innovation. This way a too strong goal alignment can function as an obstacle for innovation. (Gieskes and van der Heijden 2004)

Chieh-Yu did not limit the concept of innovation to merely product innovation and conducted a survey under Taiwanese service companies to study factors influencing technological innovations in services (Chieh-Yu 2006). Chieh-Yu focussed purely on the technological side of innovation and approached the subject from a “macro” point of view. Chieh-Yu proved that there is a significant positive relationship between six defined factors and technological innovation.

<table>
<thead>
<tr>
<th>Influencing Factor</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Explicitness of Technology</td>
<td>Technological characteristics</td>
</tr>
<tr>
<td>2 Accumulation of Technology</td>
<td>Technological characteristics</td>
</tr>
<tr>
<td>3 Organizational encouragement</td>
<td>Organizational characteristics</td>
</tr>
<tr>
<td>4 Quality of human resources</td>
<td>Organizational characteristics</td>
</tr>
<tr>
<td>5 Environmental uncertainty</td>
<td>Environmental characteristics</td>
</tr>
<tr>
<td>6 Governmental support</td>
<td>Environmental characteristics</td>
</tr>
</tbody>
</table>

Figure 2. Influencing factors of innovation, Chieh-Yu 2006.

The research shows an interesting influence of governmental support on technological innovations. This can be ascribed to the encouragement policy of the Taiwanese government. The Taiwanese government tries to proactively push companies towards innovation in order to obtain a leading position in global services. The participating managers of the surveyed service companies perceive this encouragement policy to be a good motivator for innovation.

Empirical research on factors impeding innovation and organizational learning is rather limited. The main body of literature is formed by two studies based on data from the Canadian Survey of Innovations held between 1997 and 1999 and one study based on data from the France Community Innovation Survey 2 held between 1994 and 1996 (Baldwin and Lin 2002; Galia and Legros 2004; Tourigny and Le 2004). All three studies focus mainly on a manufacturing environment and all three studies show a particular interest in the relation between firm characteristics and perceived obstacles of innovation.
Tourigny and Le report that over 90% of the investigated innovative firms faced some form of impediments. The five factors perceived as the most serious impediments to innovation are as follows:

<table>
<thead>
<tr>
<th>Impediments</th>
<th>Perceived to be most important by</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Inability to devote staff on an on-going basis due to production requirements</td>
<td>58%</td>
</tr>
<tr>
<td>2  High cost of development</td>
<td>55%</td>
</tr>
<tr>
<td>3  Lack of skilled personnel</td>
<td>39%</td>
</tr>
<tr>
<td>4  Lack of financing</td>
<td>27%</td>
</tr>
<tr>
<td>5  Organizational rigidities in the firm</td>
<td>20%</td>
</tr>
</tbody>
</table>

Figure 3. Most serious impediments to innovation (Tourigny and Le 2004)

Another interesting finding of the same study is that organisations are able to overcome most of the above impediments. Organizational rigidities turned out to be the most difficult obstacles to conquer.

The research results above show that motivation for innovation in manufacturing can come from different sources inside and outside organizations. The same can be argued when it comes to obstacles for innovation in manufacturing. It is even more important to determine that drivers as well as obstacles function interdependent: Combinations of drivers influence innovation, combinations of obstacles influence innovation and combinations of drivers and obstacles influence innovation (Koc and Ceylan 2007).

A confrontation of the different research results on obstacles and drivers of innovation learns that in some cases the presence of a factor acts like a driver of innovation and the absence of the same factor acts like an obstacle of innovation. For example the proven positive influence of high quality personnel from the Chieh-Yu study and the proven negative influence of the lack of skilled personnel from the Tourigny and Le research.

**Drivers and obstacles of innovation in logistics**

In today’s knowledge-based economies, services hold an increasingly dynamic and crucial role. The logistics industry is an example of the erection and development of a vital new service-based industry. It has transformed from the business concept of transportation to that of serving the entire logistical needs of customers. Not only independent logistical firms but also most manufacturing firms need to be aware of the service aspects of the products they present their clients. The service component offers a very good chance of gaining sustainable competitive advantage in the hyper-competitive global market. Conversely poor service or a reluctance to innovate offers a fairly good chance of losing customers (Chapman, Soosay et al. 2002; Esper, Fugate et al. 2007).

The latest development in the area of continuous innovation and improvement is the concept of collaborative improvement. This research area concentrates on continuous innovation and continuous improvement over the classic boundaries of an organisation in the larger context of the supply chain (Boer, Gertsen et al. 2005). The same reasons that motivated companies to collaborate in their Supply Chain in the first place can also motivate companies to embark on collaborative improvement activities, i.e. better cost efficiency, improving buying power, shorter delivery times and shorter product development times (*idea to shelf time*).
In services consumers play an especially important role in innovation. One of the specific attributes of services is that the consumer is highly involved in the ‘production’ process. Each consumer has its own special wishes and demands concerning the features of the provided service. And because of this consumers do not only “… provide input on their own needs, they can also help design the service concept and the delivery process” (Zeithaml and Bitner 2003). In some cases - e.g. the scientific instrument market- consumers can even take the lead in innovation processes whereas producers merely adopt an assisting and supporting role (von Hippel 1976).

Because there were no reports on empirical research into drivers of innovation in logistics, Soosay and Hyland distilled six main areas of key drivers from the CIMA literature (Soosay and Hyland 2004). They used these six main areas of key drivers to start their exploratory study into the drivers of innovation in logistics; a series of case studies in Australian and Singaporean distribution centres. The groups of drivers come from internal and external sources. Both the internal and external groups of drivers can push or pull innovation in different directions creating 4 different types of drivers.

<table>
<thead>
<tr>
<th>Category of key drivers</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Available knowledge and information</td>
<td>When employees acquire or generate new knowledge there is a push to use this knowledge in innovative ways.</td>
</tr>
<tr>
<td>2 Performance measure</td>
<td>Measuring can show that the firm is underachieving in its performances drives to innovative approaches to improve.</td>
</tr>
<tr>
<td>3 Human resource management systems</td>
<td>HRM systems play an important role in obtaining knowledge trough the hiring of highly skilled personnel and stimulates (a culture of) learning and innovation trough a system of incentives.</td>
</tr>
<tr>
<td>4 Organizational structures</td>
<td>Internal structures as temporary teams and cross-functional teams accelerate the distribution of knowledge in an organisation.</td>
</tr>
<tr>
<td>5 Project planning / control</td>
<td>Project planning and control sets the direction of a project and drives any innovation in that direction.</td>
</tr>
<tr>
<td>6 Technology</td>
<td>Often more regarded as the key to innovation. Technology can drive innovation by improving the generation, capturing, sharing and exploiting of information and knowledge.</td>
</tr>
</tbody>
</table>

Figure 4. Drivers of innovation, (Soosay and Hyland 2004)

Figure 5. provides a short overview of the 6 categories of key drivers of innovation distilled from the CIMA literature.

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Figure 5. Adapted from Boer, Caffyn et al., 2001 and Soosay and Hyland, 2004.
The aim of the Soosay and Hyland study was to explore what the drivers of innovation in the logistics function are. In semi-structured interviews managers from each of the participating companies were asked to describe what factors were driving their company towards innovation. The research-characterized as a preliminary investigation-resulted in a list of seven drivers of innovation in distribution centres and their source (internal or external) and direction (push or pull) of each driver.

<table>
<thead>
<tr>
<th>Driver</th>
<th>Source</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Financial reasons</td>
<td>Internal</td>
<td>Pull</td>
</tr>
<tr>
<td>2 Customer orientation</td>
<td>External</td>
<td>Pull</td>
</tr>
<tr>
<td>3 Employee orientation</td>
<td>Internal</td>
<td>Push</td>
</tr>
<tr>
<td>4 To have a leading edge in industry</td>
<td>Internal</td>
<td>Pull</td>
</tr>
<tr>
<td>5 Operational Performance</td>
<td>Internal</td>
<td>Pull</td>
</tr>
<tr>
<td>6 Competition</td>
<td>External</td>
<td>Push</td>
</tr>
<tr>
<td>7 Shareholder orientation</td>
<td>Internal</td>
<td>Pull</td>
</tr>
</tbody>
</table>

The researchers found that the three drivers perceived as most important by the interviewed managers were; Financial reasons, Customer focus and increasing global Competition. The in advance predicted impact of cultural differences between the Australian and Singaporean companies turned out to be surprisingly limited. Also a shareholder orientation was perceived as a non important driver of innovation in both Australia and Singapore.

The combined findings of the Soosay&Hyland and Chieh-Yu research on drivers of innovation and the Tourigny&Le research on obstacles of innovation form the theoretical starting point of this research. Because the answers of the interviewed managers were often rather similar and focused on the same themes Soosay and Hyland choose to work with groups of drivers instead of separate drivers. This approach is adopted in this study. All groups of drivers are firmly based in literature and supported by the outcomes of the three researches.

<table>
<thead>
<tr>
<th>Influencing factors</th>
<th>Driver</th>
<th>Obstacle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Financial issues</td>
<td>Driver</td>
<td>Obstacle</td>
</tr>
<tr>
<td>2 Operational performance issues</td>
<td>Driver</td>
<td>Obstacle</td>
</tr>
<tr>
<td>3 Customer orientation</td>
<td>Driver</td>
<td></td>
</tr>
<tr>
<td>4 Organizational encouragement</td>
<td>(presence is) Driver</td>
<td>(absence is) Obstacle</td>
</tr>
<tr>
<td>5 Organizational rigidities</td>
<td>(absence is) Driver</td>
<td>(presence is) Obstacle</td>
</tr>
<tr>
<td>6 Quality of human resources</td>
<td>(presence is) Driver</td>
<td>(absence is) Obstacle</td>
</tr>
<tr>
<td>7 Competition</td>
<td>(presence is) Driver</td>
<td>(absence is) Obstacle</td>
</tr>
<tr>
<td>8 Environmental uncertainty</td>
<td>(presence is) Driver</td>
<td>(absence is) Obstacle</td>
</tr>
<tr>
<td>9 Governmental support</td>
<td>(presence is) Driver</td>
<td>(absence is) Obstacle</td>
</tr>
</tbody>
</table>

Figure 6. Summarized from Soosay and Hyland, 2004.

Figure 7. Distilled from literature; Drivers and Obstacles of innovation
Figure 8 summarises the backgrounds of each group of drivers and their importance.

Both the importance of innovation for gaining competitive advantages and the new and growing position of the logistics sector has been demonstrated from the existing literature. The combination of the two areas is a very interesting one. Even more interesting is the combination of the concept of innovation and the logistics supply chain. Especially because literature shows that consumers play an important and highly involved role in the innovation processes of service providing companies. As shown is the research on both drivers and obstacles of innovation in logistics limited. Reports on research on drivers and obstacles of innovation in cooperation with suppliers and / or customers are even rarer. In order to make sustainable progress within these areas one of the first questions to be answered is what factors drive and what factors impede firms to start (or keep) innovating. This research aims to answer this question and by doing so creating a foundation for further research.
<table>
<thead>
<tr>
<th>Influencing Factors</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Financial reasons</td>
<td>- One of the most important group of drivers according to Soosay&amp;Hyland</td>
</tr>
<tr>
<td></td>
<td>- High cost of development and lack of financing are important impediments of innovation according to Tourigny&amp;Le</td>
</tr>
<tr>
<td>2. Organizational support</td>
<td>- The Chieh-Yu study proves that organizational encouragement has a positive influence on innovation</td>
</tr>
<tr>
<td>and encouragement</td>
<td>- The Tourigny&amp;Le study proves that lack of ongoing organizational support and encouragement has a negative influence on innovation</td>
</tr>
<tr>
<td>3. Employee orientation</td>
<td>- The results of all three researches support that quality and knowledge of personnel and the quality of Human Resource Systems is influencing innovation in a both positive and negative way</td>
</tr>
<tr>
<td>4. Environmental uncertainty</td>
<td>- Both uncertainty and competition are generally agreed on to be important drivers of innovation.  Although competition is closely related to uncertainty is the contents of environmental much wider than just competition. Market development, customer behaviours and macro economic developments for example can be grouped under environmental uncertainties. The absence of uncertainty and competition can ease a companies’ urge to innovate.</td>
</tr>
<tr>
<td>5. Competition</td>
<td></td>
</tr>
<tr>
<td>6. Customer orientation</td>
<td>- The most important driver of innovation according to the Soosay&amp;Hyland study</td>
</tr>
<tr>
<td>7. Governmental support</td>
<td>- A surprisingly important driver of innovation according to the Chieh-Yu study. The absence of this factor in other researches can be explained by the absence of a governmental stimulation programme. The absence of governmental support in various forms – i.e. financing and knowledge – can act as an obstacle for innovation.</td>
</tr>
<tr>
<td>8. Organizational rigidities</td>
<td>- Not only an important obstacle of innovation according to the Tourigny&amp;Le research but also the most difficult impediment to overcome.</td>
</tr>
<tr>
<td>9. Operational performance</td>
<td>- Important group of drivers in the Soosay&amp;Hyland study</td>
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<tr>
<td></td>
<td>- Supports the generally accepted idea that innovation is a very important way for companies to gain sustainable competitive advantage.</td>
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<tr>
<td></td>
<td>- Tourigny&amp;Le and Gieskes&amp;vd Heijden argue that too much of a goal focus can function as an obstacle by leaving no room for innovation</td>
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</table>

Figure 8. Distilled from literature; Drivers and Obstacles of innovation
Case study methodology

For this research an exploratory approach was adopted as there is limited empirical research on drivers and obstacles of innovation in logistics. A series of case studies involving interviews and observations was used to investigate this research area.

The adoption of a case-study methodology can be justified not only by the limitations of existing reports on empirical research but also by the conclusions that innovation is a multi-perspective topic and that influencing factors of innovation do not operate separately but interdependently. These arguments plead for an in-depth qualitative approach instead of a wider and quantitative approach. The case-study methodology combines both ‘what’ and ‘how’ questions to explore the selected research area with greater depth (Yin 1994). Meredith cites three outstanding strengths of case-study research put forward by Bebensat et al. which all three support the adoption of the case method for this research (Bebensat et al. 1987; Meredith 1998):

1) The phenomenon can be studied in its natural setting and meaningful, relevant theory generated from the understanding gained through observing actual practice.
2) The case method allows the question of why, what and how, to be answered with relatively full understanding of the nature and the complexity of the complete phenomenon.
3) The case method lends itself to early, exploratory investigations where the variables are still unknown and the phenomenon not at all understood.

The basic aim of this research is not to create theory but to develop scientific knowledge. Reynolds classified five objectives that scientific knowledge should provide (Reynolds 1971);

- A method of organizing and categorizing ‘things,’; a typology.
- Predictions of future events
- Explanations of past events
- A sense of understanding about what causes events, and in some cases,
- The potential for control of events.

This research aims to achieve a sense of understanding what causes different events of improvement and innovation. Also the work of Handfield and Melnyk on scientific theory building processes supports that in-depth case-studies are an appropriate method for researches with the intention to explore a territory (Handfield and Melnyk 1998).

The central objective of this research as developed above and in the previous chapter can be worked out into four research questions;

- What are the most important factors to cause logistics firms to (continuously) improve and innovate? (drivers of innovation)
- What are the most important factors hampering logistics firms to (continuously) improve and innovate? (obstacles of innovation)
- What are the most important factors to cause logistics firms to (continuously) improve and innovate in cooperation with suppliers and / or customers? (drivers of collaborative improvement)
What are the most important factors hampering logistics firms to (continuously) improve and innovate in cooperation with suppliers and / or customers? (obstacles of collaborative improvement)

In order to collect the data to give in-depth – ‘what’, ‘why’ and ‘how’- answers on these research questions a group of 10 logistical firms and firms with a distinct logistics function was selected. The firms have been chosen by purposive or judgemental sampling. Purpose sampling is extremely useful when a research aims to develop an area about which is only little known (Mays and Pope 1995). Guarte and Barrios (2006) prove that purposive sampling as used in this study can produce reliable results since bias is contained even in severely heterogeneous populations (Guarte and Barrios 2006). To be able to create an image of the logistics sector as a whole the research population needed to contain; transportation companies (traditional and specialized), distribution centres, trading companies and manufacturing companies from different sizes and active on different markets. This led to a sample structure (the first step Voss et al. 2002) constructed along two scales; size and logistics function/ capabilities. Then through an internet scan of firm websites and in close cooperation with the participating consultancies a number of companies with the required characteristics was selected (the second step Voss et al. 2002). The companies from the list that responded positively to the request to participate in the study form the research population. This varied selection is in line with the exploratory nature of the research.

In each of the selected companies managers directly involved in decision making processes on innovation, were interviewed. The interviews had an average duration of 80 minutes with a minimum of 55 minutes and a maximum of 150 minutes. The majority of the interviewed managers were after the interview prepared to answer extra questions and provide additional information through telephone or by email during the course of the research. All of the 10 companies have been visited to observe the business processes. Some of these visits consisted of a sight seeing tour through all the companies’ processes others involved short interviews with employees on all levels and detailed introductions to the different systems and processes. In addition to the managers of the logistics firms a group of 4 consultants in logistics have been interviewed. The consultants were interviewed in order to support the research findings with expert –firm external- opinions.

The interviews with both the managers of the logistics firms and the consultants were conducted at the hand of a semi-structured interview (appendix A). The interview structure consists of both descriptive questions (firm characteristics) and questions derived from the research questions that challenge the interviewees to share his knowledge and experience on the researched phenomenon. This method makes it possible to collect data rich in detail. All interviewees confirmed the contents of the interview notes and analyses derived from the interviews. The structure of the interviews and the confirmation of the data together, provide a reasonable degree of internal validity. Multiple cases may reduce the depth of study when resources are constrained but can both augment external validity, and help guard against observer bias (Voss et al. 2002). The external validity however, remains relatively low since that is one of the characteristics of a case-study approach and because of the fact that there were only 10 firms studied. The limitation of the research population to 10 firms was the result of a decision to ensure a research with greater depth.
Results

Research population
The 10 logistic firms selected by purposive sampling represent an intersection of today’s logistics within the Netherlands. Not only traditional transportation and distribution companies were selected but also the logistic functions of manufacturing, assembly and trading companies. The companies vary in function, form, used technology and size. The smallest firm in the study has a staff of 25 employees. The largest firm has a staff of somewhere around 25,000 employees. Figure 9 shows an overview of the profiles of the participating companies and the consultancies forming the expert group.

Continuous innovation in logistics
Of all ten companies only two (F4 and F8) have adopted a form of continuous innovation/improvement structure focussed on their logistic processes and activities. Firm 4 is working hard to make this a part of the Standing Operating Procedures (SOPs). Within firm 8 the continuous innovation process is a part of a large project in order to improve the total supply change. Only one of the companies (F8) is working with a knowledge management system. This system is also a part of the larger supply chain optimization project.

When asked if the company was involved in innovation activities in cooperation with customers and/or suppliers only firm 3, firm 4 and firm 8 answered positively. Firm 3 considers knowledge growth as a condition for today’s and tomorrows’ success. The have started and are developing cooperation structures with some of their largest clients in order to exchange knowledge and use it to improve the supply chain. Firm 4 simply introduced possible improvements in logistics as an extra agenda bullet during the two weekly meetings with their most important clients. Firm 8 has recently discovered that there is a lot to be gained within the logistic processes of the whole supply chain. This discovery resulted in a large scale initiative on the corporate level that not only has the task to optimize the existing supply chain but also keep it optimized in the future through cooperative improvement activities.

When confronted with these findings the consultants assented the low level of innovative activities in the logistics sector. Consultancy 4 characterized the logistic sector from their experience as “a following sector”. 80% of all logistic service providers simply follow the changes in the market. A little less than 20% anticipate on upcoming market changes. And not even 1% of the companies in the sector differentiates itself from the mass by creating a whole new service or approaches the old services from a totally different point of view.

The managing director of firm 3 stated that many companies in the logistics service sector are lacking the right kind of knowledge to be able to innovate and improve on a structural basis. Consultancy 4, which has performed several projects in cooperation with colleges and universities, confirms this view. Especially smaller companies seem to often lack the required knowledge.

Long term view
The responses obtained from the participating managers tended to focus on the nine groups of factors influencing innovation as were derived from existing literature. During the interviews another, in the eyes of the interviewed managers, important factor emerged; long term vision. Because the expert group confirmed the important influence of a long term view on innovation and improvement, this factor is added as the tenth factor affecting innovation.
Drivers and obstacles for innovation in Logistics: *Case studies in Dutch Logistics*

<table>
<thead>
<tr>
<th>Firm (F)</th>
<th>Short description</th>
<th>Number of employees</th>
<th>Age</th>
<th>Independent or logistic function of a company</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Small family transportation company</td>
<td>25 employees</td>
<td>40 years</td>
<td>Independent</td>
</tr>
<tr>
<td>F2</td>
<td>Medium size transportation company</td>
<td>90 employees</td>
<td>73 years</td>
<td>Independent</td>
</tr>
<tr>
<td>F3</td>
<td>Medium size transportation company specialized in conditioned transports.</td>
<td>140 employees</td>
<td>10 years</td>
<td>Independent</td>
</tr>
<tr>
<td>F4</td>
<td>Large transportation and distribution company</td>
<td>1000 employees</td>
<td>37 years</td>
<td>Independent</td>
</tr>
<tr>
<td>F5</td>
<td>Large trading company of metal pipes. Also service provider: transportation, warehousing, certification etc.</td>
<td>70 employees</td>
<td>20 years</td>
<td>Function of larger company</td>
</tr>
<tr>
<td>F6</td>
<td>Large contract manufacturer of high tech, mega-tronic machinery. (main facility)</td>
<td>1700 employees</td>
<td>50 +</td>
<td>Function of larger company</td>
</tr>
<tr>
<td>F7</td>
<td>Large contract manufacturer of high tech, mega-tronic machinery. (independent local facility)</td>
<td>330 employees</td>
<td>100 +</td>
<td>Function of larger company</td>
</tr>
<tr>
<td>F8</td>
<td>Large production company of household electrics</td>
<td>25.000 employees</td>
<td>&lt; 1 year</td>
<td>Function of larger company</td>
</tr>
<tr>
<td>F9</td>
<td>Large chain of supermarkets (distribution centre)</td>
<td>400 employees</td>
<td>12 years</td>
<td>Function of larger company</td>
</tr>
<tr>
<td>F10</td>
<td>Large chain of retail stores (distribution centre)</td>
<td>100 employees</td>
<td>34 years</td>
<td>Function of larger company</td>
</tr>
</tbody>
</table>

**Consultancy (C)**

<table>
<thead>
<tr>
<th>Consultancy</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Consultancy specialized in offering clients total logistic solutions to improve the output of their operations.</td>
</tr>
<tr>
<td>C2</td>
<td>Consultancy specialized in process improvement in every aspect of the clients’ organisation</td>
</tr>
<tr>
<td>C3</td>
<td>Consultancy specialized in process improvement in every aspect of the clients’ organisation</td>
</tr>
<tr>
<td>C4</td>
<td>Consultancy specialized in aiding innovation and cooperation</td>
</tr>
</tbody>
</table>

Figure 9. Profile of companies interviewed
Drivers of innovation in logistics

The participating managers were asked to indicate which factors caused their companies to embark on innovative strategies and why. All managers gave more than one factor so additionally they were asked to rank their answers in order of importance. Figure 10 shows the frequency of their different responses.

![Figure 10. Drivers of innovation in logistics](image)

Financial reasons

Nine of the ten participating firms mentioned financial reasons as an important reason for innovation. The set goal is rather basic; achieve maximum cost reduction. Especially the smaller firms perceive the market they operate in as very competitive and indicate that the profits are very limited. Every euro they spend less in terms of costs creates a little more financial space. The larger companies do not see cost reduction as a condition to “stay alive” but as a way to gain a competitive advantage.

Both small and large companies state that the recent explosive rise of the oil prizes forces them to reevaluate and restructure their logistic processes. Companies like firm 6 and firm 7 who are in the contract manufacturing business, paid traditionally very little attention to logistics and the costs involved in their logistics. The contribution of the logistic part of their process on the total cost structure was simply not enough. But the recent all time high prizes of transportation and distribution have a significant influence on the cost structure of their products. The result is a re-tasking of (a part of) their innovation capabilities on the logistic processes. And because most prognoses indicate that the oil prizes will at best remain on record levels, innovation and improvement in the logistic processes need to be given a structural character.
Organizational support and encouragement
None of the interviewees mentioned organizational support and encouragement as an important driver for innovation in logistics. In case of the smaller companies this could be explained by fact that the interviewed managers were (part of) the top-management. But when asked what the influence of organizational support on an innovative attitude towards logistics in their companies was, the average answer given was; very limited. There is little organizational support and encouragement for continuous improvement in logistics. The main reason is that top-managements have a very low sense of urgency when it comes to improvements in logistics.

On the other hand, all of the larger companies state that there is a clear tendency of rising interest for innovations in logistics. As mentioned above are the fast rising oil prizes one of the important reason for this renewed interest. A scarce of qualified personnel in the logistics service sector and a demand that is slowly exceeding the supply are other factors of influence.

The consultancies of the expert-group stated in harmony that logistic success stories are rapidly spreading through all managerial levels. Networks, seminars and magazines are all spreading the examples of the advantages possible when logistic processes are being optimized. These success stories make improvements in logistics more desirable and will contribute to more organizational support and encouragement of innovation and improvement in logistics.

Long term view
Although there seems to be little organizational support and encouragement that drives innovation at this moment, top-management can play an innovation stimulating role. A long term view communicated through all layers of the organisation can be an important driver of innovation. Firms 5, 8 and 10 subscribe the importance of a long term view as well as all four consultancies. A clear and well communicated long term view in the form of a mission statement or long term action plan focuses every part of the organisation on what is important.

The mission statement of firm 10 states that the company wants to achieve cost leadership and wants its customers to look at the company as “surprising”. These two items of the companies’ mission statement made the company discover that competitive advantages could not only be created by the purchase function but that there was also an important role for the logistics function.

The consultancies state that the power of a long term vision is that it focuses on the business of tomorrow. Because innovation and improvement activities do not always have a direct impact on today’s results, many companies have a reluctant attitude towards such projects. But a long term view creates space and willingness for innovation that can influence the (near) future.

Employee orientation
Employee orientation refers to the individuals in the firm who are highly spirited and motivated, constantly seeking ways to improve; consequently driving the organization to improve and innovate (Soosay and Hyland 2004). Only firm 2 indicated that employee orientation should be an important group of drivers of innovation. The interviewed manager told that now the quality of the new generation employees (truck drivers) was rapidly deteriorating the company started to realize that skilled and motivated employees were not
only a condition for good operational performance but also for a successful innovative organization.

The category employee orientation is closely connected to the category organizational support and encouragement. It is not likely that in organizations where there is little to none stimulation to put time, thinking and effort in innovation, the employees will be an important and constant catalyst for innovation and improvement. On the other hand is the presence of organizational support and encouragement not a guarantee for an innovative working force. Other factors as the used mix of incentives, age and the level of skill and education of the employees are also of influence.

Environmental uncertainties
More than half of the companies mentioned environmental uncertainties in their answers to the question what drives their companies to innovation in logistics. Firm 2 and firm 3 are very familiar with the forcing powers of environmental changes. Firm 2 use to be an important player on the market of agricultural products. But this industry completely disappeared from their area of operations. The changed their organisation and started working in the cardboard and textile industry. But again these forms of industry disappeared from the region. Again they changed their organisation and focussed on the world of steel for the automotive and shipbuilding industry.

Market circumstances (deceases, European legislation and competition) forced firm 3 in the early nineties to choose a different direction. Against all advises they chose for the complex and regulated refrigerated transportation business. The company learned from their history that in order to keep being successful they need to continuously innovate, guided by (prognosed) environmental changes.

Firm 6 and firm 7 operate in a highly volatile and cyclic market (a.o. chip-manufacturing). The managers state that in order to be able to perform well (today and tomorrow) they need to keep improving every aspect of their business process. The first level of their innovation activities are focussed on being able to handle the hectic environment they operate in. The second level is to reduce the influence of the market changes on their operations.

Another environmental uncertainty that is gaining influence is the tight situation on the labour market. All interviewed companies find it hard to find well educated and experienced personnel or are foreseeing staffing problems in the near future. The companies feel that these developments force them to not only look for “quick fixes” but also find structural solutions through innovation. The different firms approach the issue from different angles. Firm 1 for example, is continuously trying to improve the employee satisfaction in order to keep personnel and knowledge within the company. Firm 2 is implementing a knowledge sharing and skill developing system; a form of internal education. Firm 5 has started a collaboration with a recruitment office. This collaboration increases their knowledge of the labour market, increases the availability of temporary personnel and makes it easier for temporary labourers stay within the organisation.

Another development as a result of (future) staffing problems is a renewed attention for automation projects. For example firm 9 and firm 10 are considering the automation of their product handling activities in order to become independent of the fluctuations on the labour market.
The continuously changing legislation on for example environment protection, taxes and hygiene is another category of environmental uncertainties that is pushing organisations toward innovation.

**Competition**
The consultants of consultancy 4 characterized the logistics sector as one with a brutal competition and very limited profits. Especially the transportation and distribution sector is going through rough times. The competition is that hard because there are many companies that are offering the exact same service. And in today’s market are the barriers for new companies to enter the market rather small. Where the acquisitions of the necessary equipment used to be a problem for most starters is the “lease truck and trailer” the solution. This has also resulted in a situation where financially unhealthy companies enter and stay in the market far too easy, increasing the already heavy competition in the branch and putting extra pressure on the small profit margins.

Even though most of the participating firms mention competition as a pressurising factor only firm 1 considers it an important driver of innovation. The general opinion amongst the interviewees is that a customer orientation is more important and creates more changes for sustainable advantages than a competitive orientation.

**Customer orientation**
Customer orientation is the driver that is most frequently mentioned as the driver with the largest influence on innovation and improvement in logistics.

Firm 3: Promise your customers want they need. Improve so you can always deliver what you have promised and you have the recipe for success.

Firm 4: Customer satisfaction is the key driver in all aspects of our business.

Firm 6: It is simple: Our clients pay the bills. The better we are able to meet their demand the more bills the clients will pay.

All four consultancies agree that customers are powerful in competitive markets. The customer is in the luxurious condition that he can demand a higher service level for the same price. If companies are not able to deliver a unique service there is no other option than to meet the customers’ demands and follow the rest of the market.

Trading companies like firm 5 and manufacturing companies like firm 8 discover that logistics offer good opportunities to improve customer satisfaction. The top-management of firm 8 formulated an action plan which stated that a certain level of customer satisfaction was the number one goal that needed to be achieved. An analysis of the complete company learned that improving the logistics processes offered many opportunities to improve the companies’ operational performance and eventually the customer satisfaction.

**Governmental support**
None of the companies have mentioned government support and encouragement as an important driver for innovation. On the other hand are all companies aware that the government has programs that stimulate innovation and investments. Consultants 2 and 3 acknowledge that the tangible impact of the government stimulation programs is rather limited. From their experience is the “high level of paperwork” that comes with government
support, an important reason that companies are not participating in these projects. On the other hand are the government arranged congresses and seminars having a positive influence on the “innovation-climate” and knowledge sharing.

Consultancy 4 is a (semi-)governmental organization actively stimulating innovation and investments. They believe that there are indeed not many companies that will mentioned governmental support as one of the important drivers of innovation. But they also see that their work does function as a facilitator for innovation and knowledge development and sharing.

Operational performance
Three companies regard operational performance as an import driver of innovation. Firm 8 is very specific. We have measured a long time average operational performance of 80%. This figure is simply too low. A performance of 95% is what we want to achieve. When we have been able to achieve a 95% performance level the costs will be reduced to a minimum, the timeliness of our deliverance improved to a maximum and the availability of our product will be optimized. This situation will give our company the opportunity to reach the customer satisfaction level it is pursuing.

The senior supply chain manager of firm 6 explains that high scores on operational performance are critical to his company. A company that assembles mechatronic machinery needs every part of the machine on exactly the right time in order to be able to offer the clients the promised quality on the promised date. From this view is a tie-wrap of the same importance as a high-tech processor. That makes operational performance of the logistic processes and especially deliverance reliability of the utmost importance and drives innovation and improvement activities.

All three companies that consider operational performance as an important driver of innovation and improvement are large companies. How well the logistic processes are functioning is expressed by the operational performance which is measured and published every day / week / month. That is why improving your operational performance equals improving your logistic processes.

Obstacles of innovation in logistics
The participating managers were also asked what factors hamper, delay or block innovation in logistics and to rank these factors in order of perceived importance. Figure 11 displays their responses.
Drivers and obstacles for innovation in Logistics: Case studies in Dutch Logistics

Financial reasons
Six of the companies interviewed consider costs and financial risks important obstacles for innovation. The smaller companies (F1, F2 and F3) state that the limited profits in the logistic service providing branch leave little room for innovation. Consultants 2 and 3 argue that many companies of this size are too “lean”. These companies have strictly enough capacity to answer the demands of today’s market but lack the capacity to prepare for tomorrow’s market.

The interviewed manager of firm 9 states that his company should have plenty financial resources to fund innovation and improvement. But a heavy financial burden left by the former owner makes the budgets for innovation very small.

Firm 6 is a large company and has enough financial space to dedicate capacity to innovation in logistics (supply chain engineer department). But because it is very complex to predict what the exact revenues of innovation and improvement activities will be there are significant financial risks involved in these projects. These risks are from time to time the reason not to embark on innovative activities.

Organizational support and encouragement
The determination with which the interviewees name the lack of organizational support and encouragement as an important obstacle of innovation is remarkable. It seems that logistics, and innovation in logistics in particular, never was an agenda item with any priority. “Low sense of urgency” was a phrase that was frequently used by the interviewed managers. As consultancy 1 described it; “When there is no sense of urgency within the top-management, no innovative action will be taken and no funding will be made available”.

Firms 6 and 7 explain that there never was a direct reason to put effort in logistics. Logistics was in terms of final product costs and average product delivery time of very little importance. Now that transportation and distribution costs are quickly rising is the interest for logistics and improvement in logistics rising at the same rate. One of the most tangible effects of this is the development of a tool to bundle all the necessary transportation of all the
different business units to be able to “buy” transportation for more attractive prices. The top-management is also slowly becoming aware of the value of a high deliverance reliability of components and the possibilities to increase the control on the supply chain.

The interviewed manager of firm 10 tells that his company has always been a trading company with a traditional focus on the purchase function. The logistics function was always fulfilling a supporting role. But the company realizes more and more that buying the right products at the lowest price is one part of the story but bringing the products at the right price as soon as possible to the customer is a complete other, equally important, part. Consultancy 1 adds that the functional approach (as the opposite of integral approach) puts logistics in an underdog position when it comes to organizational attention and support.

Improvement of logistics has recently become an important agenda item within firm 8. Since the company analyzed all of its processes and not only found out that the logistic performances need to be improved but also discovered the important value adding opportunities of the logistics processes. The outcomes of the analysis made the corporate management decide to free capacity and funding for innovation and improvement processes in order to optimize all logistics processes and to keep them functioning optimal in the future.

Another aspect of limited organizational support and encouragement was brought to the attention by the four consultancies and the managing director of firm 3. From their experience there are many managers who are lacking the necessary knowledge and skill to yield the weapon of innovation, let alone spread an innovative attitude throughout their companies. Especially in the smaller firms the managers have obtained their knowledge through years of experience. They are often good entrepreneurs and very well able to lead today’s business but the ability to improve today’s ways of doing business, shape the company for the business of tomorrow or approach processes from a more abstract way is missing.

**Long term view**

Only the manager of firm 6 stated that in his opinion a short term view is a rather great barrier for innovation. This low score could be explained by the fact that there are not many managers who are willing to admit that they, or their company, are lacking a good long term view.

The manager of firm 6 supported his answer with explaining the effect the introduction of a clear mission statement had in his company. When only a few years ago the top-management communicated where the company wanted and needed to be within five years, it focused all aspects of the company on achieving these goals. These long term goals created space for change, innovation and improvement. “Lacking such a long term vision takes the heart out of continuous improvement”.

The four consultancies were unanimous about the impeding effect of a short term view. A short term view will focus a company on short term goals. A focus on short term goals will make a company reluctant to spend capacity on activities that will not always show direct results. Consultancy 4 adds that they do not only encounter a lot of companies without a long term view but also without ambition. Many companies are struggling hard to keep going what is going but lack the ambition to grow, expand or be pro-active instead of reactive.
Employee orientation
It is interesting that of the four companies that mention the absence of a motivated and improvement orientated workforce as an important obstacle of innovation none has a program, regardless of what form, that stimulates employees to be innovative and to develop a positive attitude towards continuous improvement.

Only two of the participating companies (F3 and F6) have a system to improve the improvement skills and attitude of their employees on a structural basis. Firm 6 has an internal education program for its higher educated personnel. It involves the participation in green and/or black belt courses and the assignment of a mentor who is a member of the management team. Firm 3 uses a system of coaching talks to develop each employee individually.

The manager of firm 8 states that the maximum change capacity of the personnel determines the maximum innovation and improvement possibilities of a firm. Even with the most careful and understanding approach human beings can only handle a certain degree of change per time span while staying motivated.

Environmental uncertainty
Environmental uncertainties like the availability of qualified personnel can hamper innovation and improvement. Firm 9 and 10 have both recently studied logistic improvement possibilities by relocating their distribution centers. Although the outcome of both studies was that it was very desirable to relocate the distribution centers the plans were not executed because both companies fear to be unable to staff the new distribution centers.

Competition
It is not likely that managers who work in a very competitive environment mention the absence of competitive pressure as an important obstacle for innovation; and none of them did. On the other hand do the histories of for example firm 6 and 10 show that in the past a lack of competitive pressure led to a very low sense of urgency to optimize and improve logistic processes.

Customer orientation
None of the interviewed companies and consultancies mentions a lack of customer orientation as an obstacle for innovation and improvement in logistics. All the companies state that every company in the branch is well aware that it is the customer who pays the bills. The consultancies claim that the companies that did not adopt a healthy customer orientation have left the scene years ago.

Governmental support
Whether or not the government offers sufficient and the right kind of support, the participating managers and consultants do not regard it as a possible obstacle for innovation.

Organizational rigidities
Organizational rigidities come in different forms and can hamper innovation and improvement in different ways. Firm 2 for example is a rather conservative company. Its owners/managers are very reluctant towards innovation and all other changes that leads away from the way “it used to be”.

Firm 4 has grown in almost half a century from a small family transportation company to one of the largest transportation and distribution companies in the Netherlands. The company is
still owned by its founder. And the founder and its trustees are used to be doing most of the thinking. Thinking and learning together with all parts and levels of the company is for that reason a change that needs time adjust to.

Firm 5 experiences that despite the rather flat structure of the company it takes too long to pass an improvement proposal through all the different parts of the company. This often limits the results of such a proposal. The senior director of logistics of firm 8 also states that the longer it takes to run a proposal through the company the more this proposal will lose its effectiveness. In some cases the proposal even loses its relevance. Especially in a company as big as ours (25.000 employees) this forms a serious threat for all sorts of innovation and improvement.

The manager and co-director of firm 1 states that she saw her parents, who founded the company, losing their spirit to improve the closer they got to their retirement. The director of firm 3 sees the spirit to improve fade in many companies in the branch when the leading generation gets older.

The consultants of consultancy 1 are in their line of work often confronted with what they call “the concrete layer”. They describe it as a group of change reluctant employees mostly found in the middle management levels. Two important reasons for the unwillingness of this group to improve are;

- Frustration about non satisfactory work and a negative perception of the future within the company.
- Good career opportunities when the situation within the company stays exactly the way it is now.

**Operational performance**

Another important obstacle for innovation in the eyes of both the participating managers and consultants is a complete focus on achieving the goals of today’s business. Companies feel that the pressure of the customer demands, the limited profits and the heavy competition forces them to put all effort and capacity in today’s business leaving little to no room to improve the way they are doing business let alone prepare for the business of the future.

The larger companies (F6, F7, F8, F9 and F10) state that although they do not have these problems because their companies have a build in capacity for innovation and improvement, they often see other (mostly smaller) firms struggling with the pressure of the every day business.

**Drivers of collaborative improvement in logistics**

Most of the interviewed managers had to put a lot of thinking into answering the question what factors cause and what factors hamper logistics firms to innovate in collaboration with suppliers and or customers. Most of them admitted they had little knowledge of and experience with collaborative improvement in general let alone collaborative improvement focused on logistics. It is interesting that most of the managers also indicated that they considered collaborative improvement desirable for their companies.

All four consultancies stated that they knew only of little examples of collaborative improvement in logistics. Consultancy 1 simply called it a rare phenomenon. Consultancy 2 and 3 had detected that the recent trend amongst many companies to reduce the amount of
suppliers is leading to more intimate forms of cooperation between customer and suppliers. They believe that this development can also lead to more cooperative improvement projects.

Consultancy 4 had recently been pleasantly surprised by the success of a strategic collaboration between a transportation company and a manufacturing company that started from a collaborative improvement initiative. They expect that the “rumor of success” will stimulate other companies to start such collaborations.

The top-management of firm 8 is already convinced of the advantages that can be gained through collaborative improvement. The company is very confident that the new collaborative projects with both customers and suppliers will be successful. It considers it to be the next, logical, step forward to control and optimize the whole supply chain.

An interesting factor that caused firm 3 to get involved in collaborative improvement is knowledge acquisition. A few years ago firm 3 joined a continuous improvement project started by a large chain of supermarkets. Despite the many warnings they received not to cooperate with this company because of the strict demands and low payments they decided to join the cooperation because they wanted to acquire the knowledge that they considered to be essential for the development of the company. Eventually has this decision played an important role in achieving their current success.

Figure 12 shows the responses of the interviewees and their perceived importance.

![Figure 12. Drivers of collaborative improvement in logistics](image)

**Financial reasons**
Over half of the interviewed companies consider possible cost reductions an important factor to start collaborative improvement activities. They believe that such cooperation with customers and/or suppliers will fine tune their operations, create changes and will create profits for all participants.
Firm 4 has developed a basic form of collaborative improvement with one of their most important clients; 2 weekly improvement meetings. They succeeded in lowering their costs because both parties discovered that there were duplicated activities. Simple agreements permanently lowered the costs for both companies.

**Customer orientation**
The driver of collaborative innovation with the highest “score” is customer orientation. On the one hand is the explanation the same as the one explaining customer orientation as an important factor causing single firms to start and keep innovating; being able to meet the customer demands. On the other hand is the creation of “change over barriers” an additional reason to embark on such co operations. Especially the companies that are largely dependent of a select group of clients consider collaborative innovation as a good way of keeping clients; it does not directly involve joint investments but it does make the co operation more intimate.

There are also companies who are very relying on logistics that ask for or enforce collaborative improvement. The large chain of supermarkets that has firm 3 as one of its partners, demands of its partners to participate in the collaborative improvement initiatives. It is a part of their supplier and partner development strategy. The important client of firm 4 asked if the company wanted to participate but hinted that there were other parties that had shown their interest.

Firm 5 is on project basis involved in cooperative improvement activities initiated by one of Europe’s largest truck manufacturers. The recent successes of the truck manufacturer had caused significant capacity problems. One of them was that despite very efficient Just In Time processes the manufacturer had a severe shortage of storage space. There was also no space left for firm 5 to deliver their products. In cooperation the companies developed a system of adapted trailers that could be used as emergency warehouses. Firm 5 considers its participation in these projects of important customers as way to improve their service level.

**Operational performance**
Cooperative improvement gives companies instant access to the knowledge, experience and creative capacities the participating firms. Firm 3 learned from their large super market partner that you can only improve your operations when you have measured your performance. Just as important is how your clients perceive and measure your performance. Firm 3 took the performance measurement tools used by their super market partner and introduced them to most of their other clients in order to keep improving their performance.

The larger firms feel that cooperative improvement creates opportunities to control and optimize the supply chain. The interviewed manager of Firm 8 states that to be really in control of the whole supply chain is outside the span of control of many companies. But by joining forces with suppliers and customers imperfections can be detected and perfected.

Firm 10 is busy starting up a large strategic cooperation with an American forwarding company. They approach cooperative improvement from a project basis and are aiming to make their whole supply chain more transparent and more controllable. The American partner has a long history of developing and managing supply chains from Asia. Firm 10 is confident this knowledge and experience combined with their purchase experience will be the basis for operational performance optimization.
Long term view
The managers of both firm 8 and 10 consider a long term view as a guiding instrument for cooperative innovation. When a company sets certain goals the company searches for ways to achieve these goals. The long term view makes the organization focused on imperfections and opportunities; also the opportunities that can be discovered and/or achieved in cooperation with other companies.

Obstacles of collaborative improvement in logistics
When asked what the participating managers perceive to be important obstacles of collaborative improvement it their answers contain surprisingly much “feelings”. The most frequently mentioned feeling is the one of losing independence. Any form of cooperation gives that sort of feelings, whether it is justified or not, according to firm 1, 2 and 10. The consultants of consultancy 4 for who is trying to make companies cooperate one of their professional tasks, confirm that these sentiments are strong especially within family businesses. The manager of firm 10 knows from his own experience that many companies feel that they are giving away their “business secrets” when cooperation also involves information exchange.

Other practical issues can also function as a barrier for collaborative improvement. For example, how to split the eventual revenues of the cooperation? Another bump on the road can be the perceived lack of capabilities and possibilities of the potential collaboration partners.

Figure 13 summarizes the managers’ reactions.

Financial reasons
Four of the companies interviewed consider costs and financial risks important obstacles for collaborative improvement. The smaller companies (F1, F2 and F3) repeat that the limited profits in the logistic service providing branch leave little room for (collaborative) improvement activities. Consultants 2 and 3 reuse the argument that many companies of this
size are too “lean”. These companies have strictly enough capacity to answer the demands of today’s market but lack the capacity to prepare for tomorrow’s market. The fact that of the interviewed companies, only one company indicates that they are involved in a joint investment with one of their clients could stress the financial risk reluctant character of the logistics sector.

The larger firms indicate that uncertainty about the revenues of such collaboration initiatives makes it hard to calculate an expected return of investment. This uncertainty is mainly caused by a lack of knowledge of and experience with collaborative improvement.

Consultancy 4 adds that many companies who are hiring logistic services still regard these services as a non-priority activity. This view leads to a basic low cost strategy; use today the transportation that is cheapest today. Use tomorrow the transportation that is cheapest tomorrow. These companies want to remain absolutely untied to any logistic service provider in order to be able to switch as often as they like. This attitude toward logistics will hamper the development of collaborative improvement.

**Organizational support and encouragement**

Two factors are making the category organizational support an important obstacle for collaborative improvement.

The first one is the earlier mentioned lack of knowledge of and experience with collaborative improvement. One manager states that when you are not aware of the presence of a tool in your toolbox or you do not know how to yield this tool and what the effects of this tool are, you will simply not use this tool.

The second one, partly connected to the first one, is a low sense of urgency. Within the participating companies a slowly developing an awareness of the opportunities that lie within continuous innovation can be detected; a slowly increasing sense of urgency. This trend cannot be detected when it comes to the area of collaborative improvement. The sense of urgency to adopt such an approach is, partly due to unawareness, rather low.

**Customer orientation**

Firm 6 and 7 state that they are aware of the opportunities that collaborative improvement can offer their organizations. But in the manufacture to order market they operate in is it very common that the client dictates what suppliers the manufacturing company has to order from. These customer demands result in short term, project based relations with suppliers. This type of relationship with suppliers is to shallow to be successful in collaborative improvement or other forms of intimate cooperation.

**Organizational rigidities**

Within firms 5, 8 and 10 (two trading companies and an electronics producer) have the sales and purchase functions traditionally been the leading functions. Not only have these functions always been approached as superior to logistics, these function have also been the only functions that had contacts with suppliers and customers on a structural basis. The contacts of the sales departments with clients mostly had a promising character; we can deliver better products, faster and for better prices than our competitors. The contacts of the purchase departments with suppliers mostly had a demanding character; we want to have your best products, as fast as possible for the lowest price possible. These traditional approaches can form an obstacle of collaborative improvement.
For collaborative improvement of the logistic processes to be successful, a company needs to change the ways it approaches suppliers and customers. The manager of firm 8 explains that sales personnel and purchasers need to be “reeducated” to be able to achieve the set goals of the improvement strategy. Firm 8 used a set of clear and tangible examples and calculations to make its sales and purchase force aware of the opportunities that lie within collaborative improvement throughout the supply chain.

Operational performance
Also when it comes to collaborative improvement some of the participating managers and consultants consider a complete focus on achieving the goals of today’s business as an impeding factor. Companies feel that the pressure of the customer demands, the limited profits and the heavy competition forces them to put all effort and capacity in today’s business leaving little to no room to improve the way they are doing business let alone prepare for the business of the future. “When you are trying to keep your head above water there is not much attention for continuous improvement let alone for collaborative improvement” (F1).

The larger companies (F6, F7, F8, F9 and F10) state that although they do not have these problems because their companies have a build in capacity for innovation and improvement, they often see other (mostly smaller) firms struggling with the pressure of the every day business.

Discussion

Although a research population of ten firms and an expert group of four consultancies is too small to produce significant “truths”, it can certainly be used to detect trends and develop hypotheses. The results of this research show great resemblance with the outcomes of the Soosay and Hyland study into drivers of innovation in logistics in Australia and Singapore. Soosay and Hyland also used a research population of ten firms but focused on distribution centers only (Soosay and Hyland 2004).

In both Australia/Singapore 2002 and the Netherlands 2008 the managers interviewed ranked customer orientation, financial reasons and operational performance as most important drivers of innovation in logistics. But whereas the Australian and Singaporean firms also considered competition to be one of the most important factors causing an organization to innovate, the Dutch companies seem to look at it differently. They consider customer orientation a driver category surpassing the competition category. When their companies are able to meet or exceed customer demands they will stay in competition or beat the competition. Focus on the customer not on the competitor, is their motto.

These outcomes are in line with the literature stating that organizations, in order to innovate, must evolve primarily from an inward orientation keeping in mind their recourses, capabilities and competencies, towards an outward orientation where the firms devotes attention to the needs of its clients and the aggressive and volatile market place (Roberts 1991; Shanklin and Ryans 1984). The results also support the theories of Dodgson and Shepherd&Ahmed who argue that an increasingly dynamic markets, heavy (worldwide) competition and increasingly sophisticated customer needs drive companies to embark on innovative activities (Dodgson 1993; Shepherd and Ahmed 2000).
The important role of customers within the (logistics) service providing sector in general and in innovation in particular, as argued by Zeithaml & Bitner and von Hippel, is acknowledged by all of the participating interviewees (von Hippel 1976; Zeithalm and Bitner 2003). Not only are the customers the ones “paying the bills” they also have the knowledge and specifications of what “products” they want (today and tomorrow) and they are the owners of the most important operational performance score.

The category environmental uncertainty was not part of the Soosay and Hyland research. Gieskes and van der Heijden however, stated that the greater the uncertainties the greater the need is for learning and innovation (Gieskes and van der Heijden 2004). Three of the interviewed companies have ranked environmental uncertainty within their top three of drivers of innovation but all of the participating companies confirm that environmental uncertainty functions as a driver of innovation. At this moment they perceive the high oil prizes, quickly changing legislation and the developments on the labour market as the environmental uncertainties with the most influence.

During the interviews a long term vision emerged as a tenth factor affecting innovation in both positive and negative way. Both the interviewed managers and the consultants confirmed the important effect of a long term view on innovation. The argumentation that a clear and well communicated long term view guides the activities of the organisation towards the same goals and that it broadens the scope of a company over the edge of today’s business, are in line with Mintzbergs theories (Mintzberg 1987; Mintzberg 1994). He argues that a long term view in the form of a strategy, makes all parts of a company, including its innovative capacity, aim and concentrate its attention and efforts on the same goals. The absence of a good strategy can result in a fragmented use of capacities. It remains possible to “do things right but it becomes more difficult to do the right things”. De Geus and Senge, important represents of the organizational learning school, believe that a long term vision is essential for organizational learning and the development of all forms of capacities present within an organisation (de Geus 1988; Senge 1990).

The research results create the image of a sector / function that has traditionally been in a following and supporting role. On the other hand are there all different kinds of indications that logistics are evolving from offering transportation to offering solutions. Several of the participating companies realize that innovation in logistics can be a way to gain competitive advantages for today and tomorrow. And several of the participating companies are taking the first basic steps on the “innovation and improvement path”. This image is consistent with conclusions of Chapman et al, after their extensive review of the existing literature; after a long period of being the closing factor within each organisation, logistics are being discovered as a strategic factor which provide a unique competitive advantage (Chapman, Soosay et al. 2002). On the other hand is the transition from follower to enabler far form ready noticing the results in the category organizational support and encouragement. A low sense of urgency and a lack of relevant knowledge seem to keep (top-) managers from putting innovation and improvement in logistics on their most wanted list.

The participating managers of the Dutch logistics firms have a different opinion toward governmental support and encouragement than their Taiwanese colleagues. Where the research of Chieh-Yu shows governmental support as one of the most important factors causing companies to innovate are the result of this research indicating that governmental support has very little influence innovation (Chieh-Yu 2006). This difference in opinion can
be explained by the fact that the approach of the Dutch government is rather liberal whereas the Taiwanese government can be characterized as dictating.

The researches of Soosay&Hyland and Tourigny&Le classified financial reason as both an important driver of innovation and an important obstacle for innovation. The findings of this research support these findings. The results also indicate that financial reasons have a stronger negative effect on innovation in smaller companies than in larger companies. Not only is it harder for smaller companies to free enough working capital to fund innovative activities but also is their relative risk higher. This argument is supported by Nooteboom who argues that smaller firms participate less in R&D because expected returns increase with size, while the risk of failure is independent of size, or decreases with increasing firm size, so that relative to expected returns risk is higher for smaller firms (Nooteboom 1991).

Gieskes and van der Heijden argued that an extreme goal focus can create an environment which leaves no room for learning and innovation (Gieskes and van der Heijden 2004). This way a too strong goal alignment can function as an obstacle for innovation. The results of this research concur with these arguments. The participating managers and consultants consider a too strong focus on achieving the goals of the every day business, as an important factor hampering innovation. It is interesting to see that these situations of too much goal focus are created by other (familiar) factors; little financial space, too “lean” organised, low sense of urgency causes by a lack of relevant knowledge etc.

It is not surprising that the answers on the question on collaborative innovation tend to focus around the same categories as the answers on the questions on “single firm” innovation and improvement. Even more than “single firm” innovation, collaborative innovation is obstructed by a clear lack of knowledge and experience. And just like the literature suggested is the influence of “soft” issues like open communication, willingness to share knowledge, trust and common goals of great importance (Stuart, Deckert et al. 1998; Tomkins 2001). The hesitation to share “business secrets”, the unwillingness to share the revenues and the feeling to lose independence are examples of these “soft” issues present amongst the participants of this study.

During the interviews another factor of importance was added to the category customer orientation; the creation of change over barriers. The managers believe that the more intimate the relationship with their customers is the smaller the chance is that customers will turn to another party. And even when problems or dissatisfactions come to the surface customers will be more inclined to communicate these issues in order to keep the cooperation intact than to choose a direct switch of suppliers. The positive connection between cooperation and customer loyalty in a business to business environment has also been shown by the studies of Lawson-Body and O’Keefe (Lawson-Body and O’Keefe 2006).

Conclusions and directions for future research

The theoretical implications of the underlying study are threefold. It addresses the three important limitation areas of existing literature as described in the introduction; obstacles of innovation, innovation in logistics and collaborative innovation. Obstacles of innovation have been the object of study before but these researches focused on manufacturing companies (Tourigny and Le 2004; Koc and Ceylan 2007). Although the responses of the interviewees showed similarities with the obstacles as described in existing literature- i.e. financial costs.
and risk and organizational rigidities—there were also distinct differences. The most notable difference is the category organizational support and encouragement. The factors low sense of urgency and lack of relevant knowledge and experience also seem to have an important impeding effect on innovation and improvement in logistics. Especially the smaller companies seem to suffer from a lack of knowledge.

The second limitation of existing literature on innovation is the limited research dedicated to innovation in logistics. To gain a better insight in the drivers and obstacles of innovation through the whole logistics spectrum this research broadened the scope from solely distribution centres and included the logistics functions of production, manufacturing and trading companies. The interviews show that in companies where logistics are not the core business the perceived importance of logistics is lower. The perceived importance of logistics also seems to be different. For example the logistics focus of the participating manufacturing companies is on deliverance reliability in contrast to the participating trading companies with a strong logistic focus on cost minimization.

The third limitation stated that whereas most literature focuses on single firm innovation, this research aimed to explore the area of collaborative improvement. One of the most interesting findings of this study is that the participating managers seem to be completely unfamiliar with the ideas of collaborative improvement. Their answers come from a short contemplation on the subject rather than from knowledge and experience. It is not surprising that the managers think that the same factors that impede innovation within their firm will also impede innovation in collaboration with other firms. It is surprising that all of the interviewed managers state that from their point of view there are advantages to be gained from collaborative improvement activities. The supply chain manager of the largest participating company is convinced that modern companies reach a point in their maturity that embarking on collaborative innovation is the next logical step a company should take; the performed analyses simply show what the possible revenues of such activities can be. The companies that are or have been involved in collaborative improvement activities, claim that the results of these co-operations were very successful; the development of new, customized services, an increase of efficiency and the acquisition of essential knowledge.

The responses from both the managers and the consultancies create the image of logistics as a following and non-innovative sector. This situation seems to be caused by the combination of a lack of possibilities (no financial space, no free capacity, no time and no knowledge) and a lack of willingness (no sense of urgency). On the other hand is innovation regarded by all of the participants as a stepping stone for business success. The results also show a clear trend that the perceived importance of logistics, and thus the managerial attention for logistic, is increasing. The most important managerial implication of this study is that it enlarges the insight in innovation in logistics. A better understanding of what drives and hampers innovation will offer good opportunities to improve innovation management, giving organizations the change to gain sustainable competitive advantages.

Koc and Ceylan found that the obstacles and drivers of innovation function interdependent; Combinations of drivers influence innovation, combinations of obstacles influence innovation and combinations of drivers and obstacles influence innovation (Koc and Ceylan 2007). The results of this research are in line with these findings. Little knowledge of innovation can result in a low sense of urgency to start innovation. A low sense of urgency in combination with little financial space, a shortage in capacity and the pressure of achieving the goals of the every day business can stop every innovation initiative from surfacing. The same way will not
having a long term view have an impeding effect on the development of an innovative attitude amongst the working force which again can function as an obstacle for innovation.

Although the adoption of a case-study methodology is the right way to approach a complex and rather unexplored terrain it also limits the external validity of the results and conclusions. The study presents a useful starting point but additional research is necessary to validate and extend the research results. Additional research can determine if there truly is a lack of knowledge of innovation and improvement within logistics firms and whether the logistics sector truly is an innovation following sector. And if so, what factors are causing this situation? Is it temporary or structural? Are there good options to improve the level of knowledge? It is also interesting to compare the knowledge level within the logistics sector with the knowledge level within known innovative branches/sectors.

This research has shown clear indications that logistics are approached differently within different branches/sectors. It takes further research to be able to determine, categorize and classify the different attitudes towards logistics of different logistics branches/sectors. This more detailed insight will give researchers and managers the possibility to firm their grip on innovation in logistics.

Another interesting study could be aimed at the effects of implemented collaborative innovation strategies and answer cost and benefits questions as they have appeared throughout this research. This research can possibly have important managerial implications when it is able to show what type of organization under what circumstances can benefit from collaborative innovation strategies.

Great parts of the logistics sector still have the chance to develop from traditional transportation and distribution companies/functions to strategic enablers, able to give customers (internal and external) sustainable competitive advantages. Continuous innovation and improvement are part of the way towards this goal. This research shows that the opportunities of innovation and improvement are often acknowledged but less often taken. The “rumour of success” is still fighting the obstacles of innovation.
Bibliography


Appendix A: Interview Structure

Name company / organisation:

Date interview:

Firm characteristics:

- Short description of function and capabilities
- Size (number of employees)
- Independent firm or logistic function of a larger company
- Age
- Used technology (high / medium / low)
- Innovative or Non-innovative firm;
  - Innovation project in last 3 yrs:
  - R&D function :
  - Quality cycles :
  - Knowledge management (systems):

What factors are driving organisations in your branch / market to innovation?

And

What factors have caused your organisation to continuously innovate in the past few years?

Or

What factors have caused your organisation to put innovation on the agenda?

Or

What factors could drive your organisation towards continuous innovation?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

And
Please rank the mentioned drivers of innovation in most important, second important and third important.

And

Please explain your answers.

What factors in your branch/ market are impeding innovation? (obstacles of innovation)

And

What factors impeding innovation did your company meet in the last few years?

And

(Please answer for every one of the mentioned obstacles)
Did this obstacle cause:
  o That the innovation project / process could not be started?
  o That the innovation project / process could not be finished?
  o That the innovation project / process was delayed / damaged?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

And

Please explain your answers.

Have there been innovation projects/ activities in cooperation with customers and/or suppliers in the last three years?

And (when the answer is negative)

Do you know of any company in your branch / market that started and innovation project / activity in cooperation with customers and/or suppliers in the last three years?

And

What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?
And

Please explain your answers.

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

And

Please explain your answers.

Additional questions on the cooperation / (strategic) alliance:

Is there also cooperation in other areas: Joint investments? Information exchange? Etc

What party initiated the cooperation?

Was it a voluntary or coerced cooperation?

What factors are impeding your company / branch to innovate in cooperation with customers and/or suppliers? (obstacles of cooperative innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.
Appendix B: Interview Summaries

FIRM 1  45
FIRM 2  49
FIRM 3  53
FIRM 4  58
FIRM 5  63
FIRM 6  67
FIRM 7  71
FIRM 8  75
FIRM 9  79
FIRM 10  83
CONSULTANCY 1  88
CONSULTANCY 2  91
CONSULTANCY 3  94
CONSULTANCY 4  97
Company / organisation: Firm 1 (F1)
Date interview: 16 May 2008

Firm characteristics:

- **Short description of function and capabilities**
  Small family transportation company with a strong focus on flexibility and deliverance reliability. We have a nice fleet of 22 modern trucks.

- **Size (number of employees)**
  22 drivers

- **Independent firm or logistic function of a larger company**
  independent

- **Age**
  40 years old

- **Used technology (high / medium / low)**
  low

- **Innovative or Non-innovative firm**
  non-innovative firm
  - Innovation project in last 3 yrs: no
  - R&D function: no
  - Quality cycles: no
  - Knowledge management: no

What factors are driving organisations in your branch / market to innovation?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

And

First and above all cost reduction. Our cost structure consists of two important items: fuel and salaries. Most attempts to improve are aimed at reducing the cost of one of these two items. But our improvement activities are always project-based. There is no such thing as continuous improvement in our company.

A second driver for innovation is employee satisfaction. Good drivers are a scarce item on today’s market. We are very happy with the drivers we have and we are trying hard to keep them (happy). One of our tools to achieve this is, is offering our drivers good and rather luxurious trucks. From our experience we know that this is an important factor for employee satisfaction in our branch.

Of course are our customers’ demands of some influence. One of the most recent examples is the request of our largest client to become ISO certified. When your largest client demands such a thing from you, you will follow in order to keep your client.
Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Financial reasons (cost reduction)
2. Environmental uncertainties (employee satisfaction)
3. Customer orientation

And

Please explain your answers.

What factors in your branch/ market are impeding innovation? (obstacles of innovation)

And

What factors impeding innovation did your company meet in the last few years?

And

(Please answer for every one of the mentioned obstacles)
Did this obstacle cause:
   o That the innovation project / process could not be started? Yes
   o That the innovation project / process could not be finished? -
   o That the innovation project / process was delayed / damaged? -

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

The profits in our business are very, very small. There is no financial space to start with innovation activities. And there is also no guaranty whatsoever, that an improvement project will result in larger profits and if these profits will exceed the investments. We as a company are simply focused on driving as many loads as possible. That is where we are getting our profit. To achieve these every day goals, we need to be concentrated on this and that leaves no room for (structural) improvement activities. Since my brother and I took over the business recently, there is a little more capacity to look over the edge of today’s business.

The focus on achieving our daily business goals is reflecting on the whole way we run our business. We for example never gathered with all our drivers to discuss options for improvement. Only since two years we have introduced such a meeting annually. Our struggle as a company to keep our heads above water dictates our companies’ culture.

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.
Drivers and obstacles for innovation in Logistics: Case studies in Dutch Logistics

1. Financial reasons (costs and risks)
2. Operational performance (pressure of every day business)

Have there been innovation projects/ activities in cooperation with customers and/or suppliers in the last three years?

And

What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?

And

Please explain your answers.

The most important reason for such cooperation would be keeping our client(s). Maybe when we introduced a more structural form of improvement meetings there would be possibilities for improving our service, reducing costs and shorten delivery times. But to be frank, the relationship between our company and our largest client is so old that it got kind of stuck…

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Customer orientation (change over barriers)
2. Financial reasons (cost reduction)

Additional questions on the cooperation / (strategic) alliance:

Joint investments? No
Information exchange? No
Etc

What party initiated the cooperation?

If there would be such a cooperation it would be initiated by our largest client.

Was it a voluntary or coerced cooperation?

If there would be such kind of cooperation it would probably be a coerced one.

What factors are impeding your company / branch to innovate in cooperation with customers and/or suppliers? (obstacles of cooperative innovation)

And
Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

And

The answers are the same as for the obstacles of continuous improvement within our company;

The profits in our business are very, very small. There is no financial space to start with innovation activities. And there is also no guaranty whatsoever, that an improvement project will result in larger profits and if these profits will exceed the investments. We as a company are simply focused on driving as many loads as possible. That is where we are getting our profit. To achieve these every day goals, we need to be concentrated on this and that leaves no room for (structural) improvement activities. Since my brother and I took over the business recently, there is a little more capacity to look over the edge of today’s business.

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Financial reasons (costs and risks)
2. Operational performance (pressure of every day business)
Drivers and obstacles for innovation in Logistics: *Case studies in Dutch Logistics*

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**Company / organization:** Firm 2 (F2)

**Date interview:** 27 May 2008

**Firm characteristics:**

- **Short description of function and capabilities**
  
  Medium size, family transportation company
  
  Transportation of bulk goods in the Netherlands and surrounding countries (50 trucks)
  
  Truck dealership
  
  Truck en trailer maintenance
  
  Trailer construction

- **Size (number of employees)**
  
  90 employees

- **Independent firm or logistic function of a larger company**
  
  Independent

- **Age**
  
  73 years old

- **Used technology (high / medium / low)**
  
  Low

- **Innovative or Non-innovative firm:**
  
  Non-innovative

  - **Innovation project in last 3 yrs**
    
    Yes

  - **R&D function**
    
    No

  - **Quality cycles**
    
    No

  - **Knowledge management (systems)**
    
    No (in near future)

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**What factors are driving organisations in your branch / market to innovation?**

*And*

**Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull exnternal-internal))**

When we look at the history of our company we see that environmental uncertainties are an important driver for innovation. We have witnessed almost every sorts of industry disappear from this region. Our company used to be an important player in the market of agricultural products but we were able to replace it, just in time, for the cardboard industry. And when the cardboard industry started to shake we were able to make a successful switch to the textile industry. But this type of industry also left the region and our last transition was to the world of steel for the automotive and shipbuilding industry.
Another issue that is slowly forcing us to keep improving is the declining skills of the new generation of drivers. Where it used to be so that every driver started as a co-driver on the truck of an experienced employee we now have to work with drivers who come fresh out of school. If we want to create and keep good skilled drivers we have to keep investing in a decent internal education. This way we can keep knowledge and experience from slowly flowing out of our company.

Our branch as a whole has had a negative business result the last couple of years. The profits are very limited. And because of that is keeping the costs down and increasing the profits an ongoing motivation to keep improving. Especially now the oil-prize is exploding. Recent projects in this area involved the introduction of economic trailer tires and the use of “limited power trucks”.

The increasing pressure of government regulations is also pressing us towards innovation. I am using the word innovation instead of improvement because in my opinion in many cases there is no improvement, just the performance of little tricks to comply with the rules.

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Environmental uncertainties (economic tides and the power of large industry)
2. Employee orientation (recognizing that your working capital is your strength)
3. Financial reasons (cost reduction)

What factors in your branch/ market are impeding innovation? (obstacles of innovation)

And

What factors impeding innovation did your company meet in the last few years?

And

(Please answer for every one of the mentioned obstacles)

Did this obstacle cause:
- That the innovation project / process could not be started? Yes
- That the innovation project / process could not be finished?
- That the innovation project / process was delayed / damaged?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

Of course is the factor money of importance when it comes to innovation and improvement activities. When there is little to no money their will be little to no improvement projects. But when there is money available there are remaining obstacles that keep us from improving, for example the shortage of skilled personnel. We experience that young drivers are to dependent
on electronic aiding-devices. They are not able to find their way without a GPS navigation system. They are not able to make small decision on their own because there is always a cell phone at hand to call the boss. And because they are depending on electronic devices they are not focused when they do their jobs. And this lack of focus leads to employees that are not continuously thinking how to make their work, how to make their company better.

And even when I would have a very skilled and “improvement motivated” staff, there is the point of the very limited time available by the managers. In the every day business there is simply not enough time for managers to study and evaluate improvement proposals.

Another factor keeping us from innovation is the fact that in many cases we do not see the benefits of these projects exceeding the down sides; for example in case of the navigation systems I mentioned earlier.

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Financial reasons (costs)
2. Operational performance (limited time of management)
3. Organizational support (company is very conservative)

Have there been innovation projects/ activities in cooperation with customers and/or suppliers in the last three years?

Yes. Since 1977 we meet our clients and customers 4 times a year for an “improvement meeting”.

What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?

And

Please explain your answers.

The answers are short and simple; - Keeping customers (happy)
- Improving our operational performance

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Customer orientation (Keeping customers (happy))
2. Operational performance

Additional questions on the cooperation / (strategic) alliance:
Is there also cooperation in other areas:  
<table>
<thead>
<tr>
<th>Joint investments?</th>
<th>Yes, prototypes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information exchange?</td>
<td>EDI</td>
</tr>
<tr>
<td>Etc</td>
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</table>

What party initiated the cooperation?  
Supplier

Was it a voluntary or coerced cooperation?  
Voluntary

What factors are impeding your company / branch to innovate in cooperation with customers and/or suppliers? (obstacles of cooperative innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Financial reasons (costs)
2. Keeping our independence
3. Organizational support (company is very conservative)
Drivers and obstacles for innovation in Logistics: Case studies in Dutch Logistics

Company / organisation: Firm 3 (F3)
Date interview: 5 June 2008

Firm characteristics:

- Short description of function and capabilities

Our firm was erected in 1913 as a trading company in life stock. In the early nineties market circumstances (deceases, European legislation and competition) forced us to choose a different direction. We chose to specialise in refrigerated transportation.

The changeover turned out to be very successful and the company grew rapidly. Customers choose our company because we have a customer orientated attitude, outstanding operational performances and all possible types of certification (ISO, HACCP etc).

- Size (number of employees) 140 employees
- Independent firm or logistic function of a larger company Independent
- Age 10 years in this form
- Used technology (high / medium / low) High in materials Medium in ICT Innovative
- Innovative or Non-innovative firm;
  - Innovation project in last 3 yrs: Yes
  - R&D function: No
  - Quality cycles: Yes (project based)
  - Knowledge management (systems): No

What factors are driving organisations in your branch / market to innovation?

And

What factors have caused your organisation to continuously innovate in the past few years?

Or

What factors have caused your organisation to put innovation on the agenda?

Or

What factors could drive your organisation towards continuous innovation?

And
Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

By far the most important reasons to start improving and keep improving are our clients. The clients are eventually the ones who pay our bills. The more we are able to meet their demands, the more our clients are willing to hire our services. Meeting the demands of our customers and delivering the service exactly like you promised are the golden rules in this company (mission statement). Every employee from top to bottom is aware of these rules. We consider this approach as successful as we notice that employees not only work with a customer orientated attitude but also regularly come up with ideas to improve our standards.

When you look at the history of our company you will find that environmental uncertainties have had a great influence. We learned from it that in order to keep being successful we need to keep innovating guided by the environmental changes we are challenged with.

Of course are there also financial reasons that stimulate to keep improving. The lower we can keep our costs the higher our profits are. Nowadays there is an extra focus on cost reduction because of the explosive rise of the oil prizes. We also see that our clients start improvement projects in order to reduce their transportation and distribution costs.

Another factor of influence is the fading level of skills and knowledge of the latest generation drivers. Trucker-schools are mostly nothing more than a driving course and we let the phenomenon “internal training” slip away in our branch; also in our company. On today’s labour market it is very hard to get drivers, let alone well trained and well educated drivers. This situation constantly challenges us to revaluate our efficiency but also to change our scope to foreign labour markets (i.e. Germany and Poland).

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Customer orientation
2. Financial reasons (Cost reduction)
3. Environmental uncertainties

What factors in your branch/ market are impeding innovation? (obstacles of innovation)

And

What factors impeding innovation did your company meet in the last few years?

And

(Please answer for every one of the mentioned obstacles)
Did this obstacle cause:
  o That the innovation project / process could not be started? Yes
  o That the innovation project / process could not be finished? 
  o That the innovation project / process was delayed / damaged?
Drivers and obstacles for innovation in Logistics: Case studies in Dutch Logistics

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull and external-internal))

Innovation and improvement requires a certain level of entrepreneurship. And it requires a certain degree of guts. Many companies choose the way that gives a safe feeling; the old and familiar way. Successful innovation and improvement also require knowledge; the type of knowledge that many companies in the logistics service sector lack. A lot of competitors thought we lost our mind when we started cooperating with the largest chain of super markets in the Netherlands. This client was known for being very demanding and only willing to pay the lowest possible price. But we started the cooperation because we needed their knowledge and experience. And what we have learned from this company is one of the reasons of our success.

Two other factors that are impeding innovation are; costs and the pressure of the every day business. Every company in a branch that can be characterized by strong competition and minimum profits has trouble of finding financial space for innovative activities. We all try to be as “lean” as possible. And that leaves in many cases little room for innovative capacity. And when you are working hard to achieve the goals of today you sometimes really have no time to focus on the goals of tomorrow.

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Lack of entrepreneurship (“guts”)
2. Financial reasons (costs)
3. Operational performance (pressure of every day business)

Have there been innovation projects/ activities in cooperation with customers and/or suppliers in the last three years?

Yes. We have agreements with a few of our larger clients that there are no barriers to look into each others operations. We meet with these clients on a regular basis. And one of the most tangible results until so far is that a client decided to build a new distribution centre and adjusted it to our improvement proposals.

We are also implementing a system in which are clients can score our performance from their point of view, with their knowledge and their experience. This will not only help us to improve our current processes but also be constant source of relevant knowledge.

And

What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?

And
Please explain your answers.

Most important reasons to start such cooperation is to obtain and exchange knowledge. Especially when you are a smaller company within a world of large, powerful and experienced clients and competitors. This knowledge gives us first of all the ability to better understand the needs and demands of our customers. But it also gives us the tools to improve our operational performance.

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Knowledge build-up
2. Customer orientation

Additional questions on the cooperation / (strategic) alliance:

Is there also cooperation in other areas: Joint investments? Information exchange? No
Etc Yes, EDI

What party initiated the cooperation? We chose to start the collaborations

Was it a voluntary or coerced cooperation? Voluntary

What factors are impeding your company / branch to innovate in cooperation with customers and/or suppliers? (obstacles of cooperative innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

An important reason for smaller companies to stay away from such types of cooperation is that they are afraid to lose their independence. On the other hand there again is a great lack of knowledge. Companies do not know what the possibilities are and how to start things up.

Another issue is the perception of the function logistics. In many trading, assembly and manufacturing companies, logistics have always been approaches as; the irritating part that also had to be done. Only the last decade has the attitude towards logistics been changing in a positive way.
Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Stay independent
2. Low sense of urgency
Company / organisation: Firm 4 (F4)
Date interview: 23 April 2008

Firm characteristics:

- Short description of function and capabilities
  Distribution, Storage and Transport. Specialized in Airport cargo

- Size (number of employees) 1000 employees in total

- Independent firm or logistic function of a larger company
  Independent

- Age 37 years

- Used technology (high / medium / low)
  Medium → Tracking/Tracing, EDI

- Innovative or Non-innovative firm;
  upcoming innovative

  o Innovation project in last 3 yrs: Yes (EDI, 2 weekly (quality) meetings
  o R&D function : -
  o Quality cycles : 2 weekly quality meeting (internal and customer)
  o Knowledge management (systems): No

What factors are driving organisations in your branch / market to innovation?

And

What factors have caused your organisation to continuously innovate in the past few years?

Or

What factors have caused your organisation to put innovation on the agenda?

Or

What factors could drive your organisation towards continuous innovation?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))
Customer satisfaction is the driving key in our business. We are completely dependent on our customers and their wishes and demands. And when you fall behind in serving the customers needs you will be replaced by the competition in this market.

A good example of customer involvement / pressure is the demand for information. Modern customers want to be able to see at any stage in the process where their products are and what their status is. In our case this has led to the implementation of EDI.

Another factor driving our company and companies in our branch to innovate is cost reduction. A recent example directly deriving from this driver is the introduction of LZVs (long, heavy vehicles). Larger trucks imply less kilometres, less trucks and less drivers and thus saves money. The implementation of a new planning system causing a more efficient routing is another example in the category cost reduction.

In the near future the increasing environmental pressure from the government will drive companies to keep innovating / improving. A possible result in our branch could be that transportation companies integrate to so far a degree that they will transport each others freights in order to limit the amount kilometres driven by the trucks.

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Customer orientation
2. Competition
3. Financial reasons (cost reduction)

And

Please explain your answers.

What factors in your branch/ market are impeding innovation? (obstacles of innovation)

Innovation projects cost money and not every company has the financial back-up our company has.

And

What factors impeding innovation did your company meet in the last few years?

The commitment and push from the top-level management to continuously innovate/ improve is rather weak. There are recently some slight changes noticeable but overall is the stimulant coming from the top-level management to innovate very limited. One of the effects was that until six months ago the 2 weekly (quality improvement) meetings were often skipped or cancelled.
In our company there are still employees who rather hush up their faults and the difficulties they face. This cultural aspect is limiting the learning abilities of our company. It for example limits the successes of the 2 weekly (quality improvement) meetings.

Our company is still completely owned by its founder. Because of this powerful position it occasionally occurs that improvement plans are simply stopped because the “boss” does not like the idea of it (organisational rigidities)

And

(Please answer for every one of the mentioned obstacles)
Did this obstacle cause:
  o That the innovation project / process could not be started?
    (commitment top level / non-learning culture / organisational rigidities)
  o That the innovation project / process could not be finished?
  o That the innovation project / process was delayed / damaged?
    (commitment top level)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Organizational support and encouragement
2. Employee orientation (learning culture)
3. Organizational rigidities

And

Please explain your answers.

Have there been innovation projects/ activities in cooperation with customers and/or suppliers in the last three years?

In the last three years 2 weekly meetings with our bigger customers have been introduced. Continuous improvement is one of the goals of these meeting. Both our company and our clients can put improvement ideas forward during these meeting. The most significant project coming from this cooperation is the introduction of the earlier mentioned EDI. Both employees from our company and employees from our customers can access up to date information through this system.

And (when the answer is negative)
Do you know of any company in your branch / market that started and innovation project / activity in cooperation with customers and/or suppliers in the last three years?

And

What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?

Again, in our business we need to keep our customers satisfied. We are depending on our customers. Their demands are driving us to innovation. Even more that we like to. But in a brutal competitive market like ours you need to stay ahead or you will go under.

Another important driver is money. In cooperation with our customers we are able to work more efficiently and saving money by doing so. Saving money / Earning more money will always drive to innovation in cooperation with our customers.

And

Please explain your answers.

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Customer orientation
2. Financial issues

And

Please explain your answers.

Additional questions on the cooperation / (strategic) alliance:

Is there also cooperation in other areas: Joint investments? Information exchange? Etc

Yes, EDI

Yes, EDI

Etc

What party initiated the cooperation?

Our company.

Was it a voluntary or coerced cooperation?

Voluntary in order to avoid a situation of coerced cooperation or losing customers. And to save money through limiting personnel costs.

What factors are impeding your company / branch to innovate in cooperation with customers and/or suppliers? (obstacles of cooperative innovation)
And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

In our case we work with a few large clients and a series of smaller clients. We can focus on our most important clients. In order to innovate in cooperation with all your clients will cost you too much money and too much time. Smaller clients can also benefit from the developments made in cooperation with our large clients.

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Financial issues
2. Operational performance (pressure of every business)
Company / organisation: Firm 5 (F5)

Date interview: 14 May 2008

Firm characteristics:

- Short description of function and capabilities

(Trading Company)

“The specialist in precision material”

For more than 20 years, our company is the specialist in precision steel pipes and tubes, bar steel and components. The main product/market segments we operate in are Fluid Power, Mechanical Engineering, Automotive Industry and Special Welded. The quality of our products is well known: perfect surface quality, extremely accurate sizes, and guaranteed mechanical properties. This consistent quality ensures cost savings for our customers and forms the basis of our long-standing reputation.

We value on-time delivery whether it be for tubes and bar steel from inventory, direct deliveries ex-mill or products made according to drawing. Our branch, Mechanical Engineering does not only form an integral part of this business unit but is also able to tap into the globally operating and stockholding corporation. Our customers are serviced via a well co-ordinated international logistic network that includes stocks in strategic locations throughout Europe. Therefore, supply of material is possible – Just-In-Time – when or where our customers require.

Our customers can benefit from the many services available. We are able to provide and archive material certificates digitally and offer solutions through our specialised logistics expertise with regard to important elements such as pricing, delivery time and supply chain management. Also, being part of our larger corporation, guarantees access to international purchasing and supply lines and vast technical expertise. Our company goes beyond supplying the product only.

- Size (number of employees) 70 employees (Business Unit)
- Age 20 year
- Used technology (high / medium / low) High

- Innovative or Non-innovative firm;
  - Innovation project in last 3 yrs Yes
  - R&D function Yes
  - Quality cycles Yes
  - Knowledge management (systems) -
What factors are driving organisations in your branch / market to innovation?

And

What factors have caused your organisation to continuously innovate in the past few years?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

Our human resource systems are aiming to attract young talent. This is a generation that is used to approach issues with a positive critical view. We also approach temporary personnel with a challenge to grow in our company. By differentiating their salaries with our “normal” personnel and giving them a change to gradually build it up over a period of 9 months, we challenge them to but their best into their work.

We are always trying to improve our processes and our cost structures. For example our actions to develop a logistical platform which, among others, allows all sites to look into the current stock. This makes it possible work more efficiently and respond in a better way to customer demands.

By developing a (middle) long term view a company can be more goals focussed instead of spending a lot of time and energy in “putting out little fires”. Also the aims and goals of management and stockholders are factors of influence. When the aim is to create money as fast as possible the focus will be much more on short term solutions. When the aim is to create a healthy company with long term competitive advantages instead of fast money (as we see it in a family business like ours), there will be more room for improvement and innovation.

Our InLoVe-meetings (purchase, logistics and sales) give the different functions the possibilities to improve not only within the separate functions but also multi-disciplinary. We yield the same approach in our personnel structures. When a new sales employee enters the company he is going to work in every department of or firm for a week long. This way we develop not only his knowledge of our firm but also a “multi-disciplinary” view.

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Financial reasons (cost reduction and “cost awareness”)
2. Achieve market leadership
3. Customer orientation

What factors in your branch/ market are impeding innovation? (obstacles of innovation)

And
What factors impeding innovation did your company meet in the last few years?

And

(Please answer for every one of the mentioned obstacles)
Did this obstacle cause:
- That the innovation project / process could not be started?
- That the innovation project / process could not be finished?
- That the innovation project / process was delayed?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

The larger the organization the longer the decision-making processes. Even though a family company like ours has a rather flat structure it still takes time and effort to run new improvement proposals through the organisation. This is hampering and slowing down improvement. (organizational structures / organizational rigidities)

Other companies can lack the right culture of change and improvement. This will stand in the way of innovation. Within our company we have created the right culture to stimulate improvement.

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Organizational structures / rigidities (timeline of decision-making processes)
2. Employee orientation (non-innovative culture)

Have there been innovation projects/ activities in cooperation with customers and/or suppliers in the last three years?

Yes

And (when the answer is negative)

What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?

And

Please explain your answers.

Because of the strong customer orientation of our company and our status as specialist we often develop customised solutions in cooperation with our clients. For example our recent storage solution for a large truck manufacturer. We have rented and prepared a few trailers that we deliver filled with the ordered materials and leave behind at the manufacturers’ site as
a mobile storage facility. To keep improving we meet with an important client as the
mentioned truck manufacturer on a two monthly basis. And because we are a specialist in our
area we can advise our clients in many ways (sorts of materials, certification, (ISO) norms
etc)

By improving in cooperation with our client we also try to benefit from their growth. We are
now involved in a project to start using plastic pallets / inlays to serve the new American
market for our truck manufacturing client.

By creating customised forms of added value we also try to keep our clients from changing
over to our competitors (change over barriers). Our company for example, has specialised in
certificated production / delivery.

Because we are a rather large company we have a certain degree of purchasing power. In
some cases we assist small clients in obtaining essential materials for a lower prize.

And

Please rank the mentioned drivers of innovation in most important, second important
and third important.

1. Customer orientation (customer demand, customer satisfaction, change over barriers)
2. Financial reasons (cost reduction and growth possibilities)

Additional questions on the cooperation / (strategic) alliance:

<table>
<thead>
<tr>
<th>Is there also cooperation in other areas:</th>
<th>Joint investments?</th>
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<tbody>
<tr>
<td>Information exchange?</td>
<td>Yes</td>
</tr>
<tr>
<td>Etc</td>
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</table>

| What party initiated the cooperation?  | Both ways          |
|                                        |                    |

| Was it a voluntary or coerced cooperation? | Voluntary |
|===========================================|-----------|
Company / organisation: Firm 6 (F6) (main facility)

Date interview: 14 May 2008

Firm characteristics:

- Short description of function and capabilities

Our group is a tier-one contract manufacturing partner. Our goal is to outperform customer expectations in delivering mechatronic solutions. Since the end of 2006 we have been part of the this group, but we have been in business since 1900 when we began as a part of a large and well known company.

Under our former flag we developed to become a worldwide supplier of advanced mechanical components, modules and complete systems. Inclusion in the new group offers us even more opportunities for global leadership in our markets: semiconductor capital equipment, medical systems, mechanisation projects and parts.

We are committed to supporting our customers wherever they have manufacturing facilities. Our sites in the Netherlands, Singapore and China are testimony to this.

- Size (number of employees) +/- 1700 employees

- Independent firm or (logistic) function of a larger company

  (logistic) function of larger company.

- Age Over a 100 years old, since ‘06 in the new setting

- Used technology (high / medium / low) High

- Innovative or Non-innovative firm; Innovative
  - Innovation project in last 3 yrs Yes
  - R&D function Yes
  - Quality cycles Yes
  - Knowledge management (systems) -

What factors are driving organisations in your branch / market to innovation?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))
In 2004 I was asked to come work for this company because the whole logistics part was kind of a chaos. I am a “logistics man”; always focussed on possible improvements. This organisation has always been very technology orientated with little attention for logistic issues. Since then the company has taken drastic, customer driven improvement measures at various levels (including the top-management level). Supply Chain Management has already shown its value to this organisation. Not only in smoothening operations but also in other (new) key activities as for example lifecycle management.

Our firm operates in a market that can be characterized as highly volatile and cyclic. We try to lessen the influence of market fluctuations through sensible “make or buy decisions” and to avoid these fluctuations by entering new/different markets (i.e. Solar). The highly volatile market we operate in drives us towards continuous improvement efforts. Our customers are experiencing the same pressure of this volatile market. They come to us to lower their breakeven-point and to spread their risks over the chain.

To keep our competitive advantage we need to keep our costs low. We consider logistics as an enabler to reduce our control burden. We need to keep innovating in order to keep the amount of manpower needed to produce our product as limited as possible. Throughout our whole company we pursue “cost-down road mapping”. One of the more recent examples of activities in this area is the development of a tool called “transparix” to keep transportation costs as low and transparent as possible.

In our business is the importance of outbound logistics in terms of costs and delivery times rather small. Because of that the attention for innovation / improvement in outbound logistics is also rather small. A recent change in our logistics is that where we used to deliver our products “ex-works” we now have to deliver them DDP / DDU. Our clients choose more and more to shift the risks of transportation towards the manufacturers. This change increases the importance of our outbound logistics (higher costs, higher risks and more complex). Also the rapid growth of transportation costs (i.e. oil prizes) make it interesting to renew our focus on outbound logistics.

Our company yields several tools to stimulate our employees to become the best they can be. When higher educated employees enter our organisation they are confronted with a high potential program. They are appointed to a coach, who is a member of our management team. In this program we offer our new employees additional education and training possibilities. For example the green and black-belt programs which have a strong orientation on improvement.

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Operational performance (deliverance reliability)  )
2. Reduce control burden  ) customer orientated
3. Operational performance (cycle time reduction)  )

What factors in your branch/ market are impeding innovation? (obstacles of innovation)
Drivers and obstacles for innovation in Logistics: Case studies in Dutch Logistics

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

The two main reasons for not innovating or stop innovating are:
- Lacking a sense of urgency
- Having too little financial resources

When the customers seem to be happy with the provided products and services a company does not have the sense of urgency to keep on innovating/improving. And when a company has no money to fund innovation activities it will probably not embark on innovation activities.

Another factor impeding innovation is a short term vision. When there is a vision where the company (every aspect including supply chain management) needs to be over a few year, this will guide a company and its innovation activities. Lacking this long term vision takes the heart out of continuous improvement.

Every company feels the pressure of meeting the goals of the every day business. This pressure leaves little room and capacity for innovation. But a company as large as ours has the funds to hire extra personnel who’s job it is not to achieve today’s goals but to prepare the way to achieve tomorrow’s goals (a.o. supply chain engineers).

Please rank the mentioned obstacles of innovation in most important, second important and third important.

And

Please explain your answers.

1. Lacking sense of urgency
2. Financial reasons (innovation costs)
3. Short term vision (absence of a good long term view)

Have there been innovation projects/ activities in cooperation with customers and/or suppliers in the last three years?

Yes, but when it comes to logistics, we do not have structural, continuous improvement structures running with our suppliers and customers.

And

What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?

And

Please explain your answers.
We are a contract manufacturer. In our line of work every part of the machine we build needs to be delivered on the right time whenever we order it. If a part (regardless which part) is not delivered or not delivered on time, our product is not ready for transportation to the client. This dependence on deliverance reliability forms an important reason to develop and maintain intimate relationships with our suppliers.

On the other side of our process we develop close relationships with our clients (including innovation and improvement projects) to push up the “change over costs” as high as possible. Our largest client is a chip-manufacturer. Because we are their largest (sub)contractor we are always involved in their pilots. In these projects we are given enough space for our own thoughts and input.

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Customer orientation (change over barriers)
2. Operational performance (deliverance reliability)

Additional questions on the cooperation / (strategic) alliance:

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<tr>
<td>-</td>
<td>No</td>
<td>Yes</td>
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What party initiated the cooperation? - Client
- Our company

Was it a voluntary or coerced cooperation? - Voluntary

What factors are impeding your company / branch to innovate in cooperation with customers and/or suppliers? (obstacles of cooperative innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

The answer is again a lacking sense of urgency. The benefits, in most cases, are for both ourselves and our clients/suppliers not that obvious that it stimulates to start such a innovation cooperation.

We also often come across the situation that a client demands that we work together with one of their selected suppliers. This of course does not stimulate any form of long term cooperation.
Drivers and obstacles for innovation in Logistics: Case studies in Dutch Logistics

Company / organisation: Firm 7 (F7) (independent local facility)

Date interview: 14 May 2008

Firm characteristics:

- Short description of function and capabilities

Our group is a tier-one contract manufacturing partner. Our goal is to outperform customer expectations in delivering mechatronic solutions. Since the end of 2006 we have been part of the this group, but we have been in business since 1900 when we began as a part of a large and well known company.

Under our former flag we developed to become a worldwide supplier of advanced mechanical components, modules and complete systems. Inclusion in the new group offers us even more opportunities for global leadership in our markets: semiconductor capital equipment, medical systems, mechanisation projects and parts.

We are committed to supporting our customers wherever they have manufacturing facilities. Our sites in the Netherlands, Singapore and China are testimony to this.

Independent local facility

Our local facility operates in the business of system integration of mechatronic (sub)systems and modules for OEMs in the high-tech capital equipment industry and in the area of production mechanisation. As a system supplier, we cover the value chain from (co-)engineering through parts production to assembly and testing.

- Size (number of employees) +/- 330 employees (local facility)
- Independent firm or logistic function of a larger company Logistic function of a larger company
- Age Over 50 years old
- Used technology (high / medium / low) High
- Innovative or Non-innovative firm; Innovative
  - Innovation project in last 3 yrs Yes
  - R&D function Yes
  - Quality cycles Yes
  - Knowledge management (systems) -

What factors are driving organisations in your branch / market to innovation?

And

What factors have caused your organisation to continuously innovate in the past few years?
Or

What factors have caused your organisation to put innovation on the agenda?

Or

What factors could drive your organisation towards continuous innovation?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

Our firm operates in a market that can be characterized as highly volatile and cyclic. We try to lessen the influence of market fluctuations through sensible “make or buy decisions” and to avoid these fluctuations by entering new/different markets (i.e. Solar). The highly volatile market we operate in drives us towards continuous improvement efforts.

In our business is the importance of outbound logistics in terms of costs and delivery times rather small. Because of that the attention for innovation / improvement in outbound logistics is also rather small. A recent change in our logistics is that where we used to deliver our products “ex-works” we now have to deliver them DDP / DDU. Our clients choose more and more to shift the risks of transportation towards the manufacturers. This change increases the importance of our outbound logistics (higher costs, higher risks and more complex). Also the rapid growth of transportation costs (i.e. oil prizes) make it interesting to renew our focus on outbound logistics.

Cost reduction remains an important factor for innovation/improvement. For example our activities to keep our stocks as limited as possible. To achieve this we (among others) enter into contracts with suppliers that give us the right to postpone the delivery of items. Another example of cost reduction projects is the development/implementation of a new tool which allows us to select the best and cheapest transportation provider by combining information from every part of the corporation.

Clients want more and more service for less and less money and are ordering their products later and later. Their demands push us towards ongoing improvements unto the point we have to ask prizes the client is not willing to pay anymore.

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Customer orientation
2. Environmental uncertainties  (volatile and cyclic market)
3. Financial reasons    (cost reduction, working capital)

What factors in your branch/ market are impeding innovation? (obstacles of innovation)
And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

As mentioned above is the share of outbound logistics in our overall cost structures and in our delivery times too low to be high on the agenda. The sense of urgency for our business is (was) lacking.

As an organization we have also been too “lean” to be able to deal with this kind of issues. This situation is at the moment slowly changing creating a little more capacity for innovation, improvement and research and development.

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Lacking sense of urgency
2. Organizational structures / Operational performance (too “lean”)

Have there been innovation projects/ activities in cooperation with customers and/or suppliers in the last three years?

Yes

And

What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?

The most important driver to start innovating in cooperation with our customers/suppliers would be realising an increase of our market share by improving the reaction speed within our supply chain.

The second driver would simply be the optimization of our supply chain.

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Financial reasons (increase of market share)
2. Operational performance (Supply Chain optimization)

Additional questions on the cooperation / (strategic) alliance:
Drivers and obstacles for innovation in Logistics: *Case studies in Dutch Logistics*

<table>
<thead>
<tr>
<th><strong>Is there also cooperation in other areas:</strong></th>
<th><strong>Joint investments?</strong></th>
<th><strong>Information exchange?</strong></th>
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<tbody>
<tr>
<td>Etc</td>
<td>-</td>
<td>Yes</td>
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There is an existing EDI between our company and our main client. We are now in the process of opening up more portals in this system to be able to exchange more and more recent information.

**What party initiated the cooperation?** Both ways

**Was it a voluntary or coerced cooperation?** Voluntary

---

**What factors are impeding your company / branch to innovate in cooperation with customers and/or suppliers? (obstacles of cooperative innovation)**

*And*

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

Companies are not willing to share opportunities and revenues through the supply chain. (internal orientation) As long as this is the case collaborative innovation is a bridge to far.

And there is also still the issue of the urgency of such an endeavour....

*And*

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Chain is not willing to share opportunities and revenues
2. Lacking sense of urgency
Drivers and obstacles for innovation in Logistics: Case studies in Dutch Logistics

Company / organisation: Firm 8 (F8)
Date interview: 30 May 2008

Firm characteristics:

- Short description of function and capabilities

A worldwide designer, developer and manufacturer of high quality consumer electronics. High technology, high quality and continuous innovation are important, guiding keywords.

Basic organisation:
- Sales (focus on trade / customer (retail))
- BU’s (focus on value creation / consumer)
- Functions (focus on value delivery)

Logistics are organized on three levels:
- Corporate process teams
- Region
- BU

- Size (number of employees) +/- 25,000 employees globally

- Independent firm or logistic function of a larger company
  Logistic function of larger company

- Age
  In this setting since 1 January 2008 (Fusion of 2 former divisions)

- Used technology (high / medium / low)
  high

- Innovative or Non-innovative firm;
  Innovative firm
  - Innovation project in last 3 yrs: Yes
  - R&D function : Yes (also in logistics, project based)
  - Quality cycles : Yes (project based)
  - Knowledge management (systems): Yes (project based)

What factors are driving organisations in your branch / market to innovation?

And

What factors have caused your organisation to continuously innovate in the past few years?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))
Our mission statement is the guiding central in our innovation activities. From our mission statement we can derive 5 focus areas for (continuous) innovation in logistics:

1. Customer service level  
2. Distribution costs  
3. Stocks (management)  
4. Planning reliability  
5. Employee engagement

High standard supply chain management is of utmost importance to an organization like ours. We can invent and manufacture the most brilliant products but when parts or product are not delivered in the rights amounts, on the right time in the right place we will lose the battle for the leadership position in the market. In terms of performance level we need to go from an average of somewhere around 80% to an average around 95%.

The possibilities to reduce costs in the logistic processes can mainly be found in transportation and warehousing. Since the oil prizes are rocketing, there is an extra interest for the costs of transportation. The oil prizes lead to reconsideration of not only the types of transportation we use and the way we organise transportation, but also of allocation decisions; possibly lowering the amount of transportation needed.

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Long term view (mission statement and derived focus areas)  
2. Customer orientation / Operational performance  
3. Financial reasons (cost reduction)

What factors in your branch/ market are impeding innovation? (obstacles of innovation)

And

What factors impeding innovation did your company meet in the last few years?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

In our company are logistics not regarded as a top priority. So there is also not a very high sense of urgency when it comes to (continuous) innovation and improvement in logistics. This low sense of urgency does not only translate into limited attention for the subject but also in limited financial resources.

Being focussed on continuous improvement is not a synonym for the implementation of all possible improvement plans. Improvement projects within the supply chain can sometimes be characterized by a long implementation process (especially complex ICT projects). There
always has to be a justifiable mix between costs and benefits. And when the implementation of an improvement plan takes too long it is not profitable.

The new organization is a fusion of 2 former divisions. Each of the formers divisions had its own focus, its own way of operating and its own culture. Before we can reach our maximum innovation / improvement capacity we need to have carefully constructed the new sector culture. But even when the all our employees have adopted the right attitude towards continuous innovation there still is only so much innovation an organization can handle.

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Low sense of urgency
2. Low speed of improvement implementation
3. Employee orientation (culture, maximum change capacity)

Have there been innovation projects/ activities in cooperation with customers and/or suppliers in the last three years?

Yes, several (a.o. corporate process teams)

And

What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?

And

Please explain your answers.

The most important reason to start cooperation with suppliers is to obtain a greater control of the supply chain. The focus of the supplier cooperation activities are:

1. Cycle time reduction
2. Design of logistics
3. Econnectivity

The most important reason to start cooperation with our customers is to build closer relationships with the customers to improve our ability to meet the demands of the customer. We yield not one standard method to develop customer cooperation but it is tailor-made for every customer.

On corporate level we have the four process teams of which one is charged with customer collaboration and another with supplier collaboration. We have recognised that there is still a great of operational improvement possible in these areas. These teams have to pave the way towards these improvements.
Please rank the mentioned drivers of innovation in most important, second important and third important.

1. More control in the supply chain in order to improve our operational performance
2. Customer orientation

Additional questions on the cooperation / (strategic) alliance:

Is there also cooperation in other areas:
- Joint investments? Yes
- Information exchange? Yes
- Etc.

What party initiated the cooperation? Our company

Was it a voluntary or coerced cooperation?

A company of our scale has the possibility to ask questions that can only be answered in a positive way. But we keep always keep in mind what the maximum capabilities of our suppliers are. We also try to turn every cooperation into a win-win situation.

What factors are impeding your company / branch to innovate in cooperation with customers and/or suppliers? (obstacles of cooperative innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

Contacts with suppliers are traditionally handled by the purchasing organisation. Contacts with customers are traditionally handled by the sales organisation. Sales as well as purchase are used to achieve their own, mostly short term goals. Both parts of the organisation are not accustomed to achieve long term, supply chain goals and have to be “re-educated”. The corporate process teams try to make these organisational entities aware of the (long term) possibilities by making these possibilities visible and touchable.

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Traditional contacts with customers and suppliers
2. Low sense of urgency
Company / organisation: Firm 9 (F9)
Date interview: 21 May 2008

Firm characteristics:

- **Short description of function and capabilities**

Our company is formed by a lean and healthy chain of 300 supermarkets across the country. We aim to be a full service supermarket that delivers its goods and services at a price level that fits our service level. Keyword in our operations are; quality, freshness, durability and service.

Our distribution centre and butchery facility is built on a terrain of 125.550 m2. Our facility is equipped to store and handle several types of conditioned and non-conditioned goods. A total of 400 employees are working here every day to handle the supplies delivered by over 300 suppliers. Good personnel, streamlined internal logistics and a state of the art picking system (“voice picking”) guaranties our 300 supermarkets that the received all the ordered goods, in the right condition, in the right amount on the right time.

- **Size (number of employees)** 400 employees

- **Independent firm or logistic function of a larger company**

    logistic function of larger company

- **Age** DC since 1996

- **Used technology (high / medium / low)** medium

- **Innovative or Non-innovative firm;**

  - Innovation project in last 3 yrs Yes
  - R&D function Yes, project based
  - Quality cycles No
  - Knowledge management (systems) No

What factors are driving organisations in your branch / market to innovation?

*And*

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

In our line of work we serve a market of two types of customers. Our first types of customers (our direct customers) are our 300 supermarkets. Our second types of customers are the final customers, the consumers. We use our innovation activities to improve our performance in
supplying our 300 supermarkets. We are always trying to increase our operational performance in for example timeliness and order completeness.

At this moment in time we experience little problems in staffing our distribution centre. Because of this and in combination with little financial resources available there is little pressure to put time and money in innovation. On the other hand might it well be that a worsening labour market will drive us in the future towards innovation (mechanisation).

Like every company we try to maximize our margins by reducing the costs. Especially in our company that has to deal with an unpleasant financial heritage is cost reduction an important driver of innovation. Another factor driving innovation on cost reduction arguments is the explosive rise of oil prizes. It is obvious that rocketing oil prizes have great impact in a branch like ours.

Government legislation can also be of influence on innovation in our branch. A good example is the change over from recyclable deposit bottles to one time use deposit bottles. The whole recycle stream had to be turned over in a waist stream; a highly monitored and accounted waist stream. The influence of government legislation on environmental issues will also be a factor driving companies to innovation in the years to come.

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Financial reasons (Cost reduction)
2. Operational performance (linked with a customer orientation)
3. Environmental uncertainties (labour market)

What factors in your branch/ market are impeding innovation? (obstacles of innovation)

And

(Please answer for every one of the mentioned obstacles)
Did this obstacle cause:
  o That the innovation project / process could not be started? Mainly
  o That the innovation project / process could not be finished?
  o That the innovation project / process was delayed / damaged?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

First of all there are the financial issues. Are there enough funds available to finance such a project / process? And when there are enough fund is the ROI transparent and attractive enough to really start the innovation project/ process? For example when we speak of innovation in terms of mechanisation, the infrastructure on the different sites forms a strong limitation. Radical changes will ask for extension of existing facilities or replacement of existing facilities, this rocketing the costs of such projects.
Environmental uncertainties as the availability of personnel also limit our innovation option. We have a good working force at the moment and changes frustrating this working force can have the undesirable side effect that they leave the company.

Many companies are so “lean” organised that next to achieving the goals of every days business there is no room for innovation and improvement. Our organisation is also organised on the “lean” principles. But within the “lean concept” we have kept a little overcapacity in some specific departments. We use this overcapacity as a project based R&D and innovation capability. This capability in combination with an “improvement oriented culture” gives our organisation the possibilities to keep improving.

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Financial reasons (available funds and expected ROI)
2. Operational performance (other companies; pressure of achieving today’s goals)
3. Environmental uncertainties (possible scarce of suitable personnel)

Have there been innovation projects/ activities in cooperation with customers and/or suppliers in the last three years?

Yes. Our customers (the supermarkets) have experienced a rapid growth in the sales of convenience foods (i.e. pan ready meal and pre cut vegetables). These foods are sold in a wide variety and keeping larges stocks of these types of products comes with larges costs. So in cooperation with our supermarkets and suppliers we have developed a new cross-loading concept in which the customers order directly at the supplier and the supplier delivers (at supermarket level) to our distribution centre. Then the order is combined with the “regular” order and delivered at the super market.

Another project within our whole branch has been the introduction of the “fresh first” standard crates for fresh product. This gives all companies in the branch the possibility to work with uniform load carriers.

And

What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?

And

Please explain your answers.

All our innovation and improvement activities are project based, including the activities in cooperation with suppliers and customers. Next to supplier evaluation there are no structural forms to improve in cooperation with suppliers and customers.
Reasons that could drive a company like ours to start a process of cooperative innovation would be the similar as the ones that drive our company internally to innovation. (except the part of possible scarce of personnel)

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Financial reasons (Cost reduction)
2. Operational performance (linked with a customer orientation)

Additional questions on the cooperation / (strategic) alliance:

Is there also cooperation in other areas: Joint investments? Fust
Information exchange? EDI
Etc

What party initiated the cooperation? Customers (supermarkets) = cross-docking
Branch = Fust
Both ways = EDI

Was it a voluntary or coerced cooperation? Mainly voluntary

What factors are impeding your company / branch to innovate in cooperation with customers and/or suppliers? (obstacles of cooperative innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

And

The willingness and possibilities of our suppliers are the most important limitations of collaborative innovation projects. And what are the costs and revenues of such a project for the different participants?

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Willingness and possibilities of suppliers
2. Financial reasons (Questions around the share of costs and revenues of projects.)
Drivers and obstacles for innovation in Logistics: Case studies in Dutch Logistics

Company / organization: Firm 10 (F10)
Date interview: 29 May 2008

Firm characteristics:

- **Short description of function and capabilities**
  Large chain of more than 200, non-food, retail stores (trading company). Specialized in amongst others shoes and fashion this company tries to obtain and maintain cost leadership. The keyword in their operations is “surprising”; surprising prizes, surprising products and surprisingly fast.

- **Size (number of employees)**
  - Over 3000 employees in total
  - Over 100 employees in the head office / DC

- **Independent firm or logistic function of a larger company**
  Logistic function of a larger company

- **Age**
  34 years old

- **Used technology (high / medium / low)** medium

- **Innovative or Non-innovative firm**
  - **Innovation project in last 3 yrs** Yes
  - **R&D function** Yes (product orientated)
  - **Quality cycles** No
  - **Knowledge management (systems)** No

What factors are driving organizations in your branch / market to innovation?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

Our long term vision is captured in our mission statement. Our mission statement (and thus our long term view) is driving and directing our innovation and improvement activities. One of the aspects of our mission statement is that we want to obtain and maintain a cost leadership position. Another aspect is that we try to be “surprising” for our clients in all possible aspects (a.o. prize, product, timeliness).

In terms of supply chain management we want to be in control. As early as possible in the supply chain we want to be able to dictate our demands and control the processes. We are always trying to improve every aspect of our whole chain. One of the most recent developments is our strategic cooperation with a new expedition partner.
Just like every other branch we feel the “cost pressure” of the high oil prices. But it is not a new factor that drives us to innovation. Our cost leadership ambition makes our organization focused on continuous improvement in every aspect of our business. Other companies are now for example, reevaluating their types of transportation. We already used several less common types of transportation like rail-freight and boat-freight.

A factor driving as well as impeding innovation is the importance of logistics as perceived by the whole organization. In our company the power of the purchase function has traditionally been rather substantial. A situation like this is impeding a focus on continuous improvement in our logistics. But over the years the role of logistics has become more and more valuable to the company. Not only in terms of operational performance but also in the perception of the other functions. This increased sense of urgency will stimulate an improving attitude toward logistics.

As an innovation enabler I would like to mention the “knowledge network” we have since we have become a part of a larger global organization. I have instant access to the knowledge and realized solutions of our sister companies within this organizations. I can for example simply visit their warehouses in search of new opportunities or possible threats.

Please rank the mentioned drivers of innovation in most important, second important and third important.

Please explain your answers.

1. Long term view
2. Financial reasons (cost reduction)
3. Customer orientation (“surprising”)

What factors in your branch/ market are impeding innovation? (obstacles of innovation)

What factors impeding innovation did your company meet in the last few years?

(Please answer for every one of the mentioned obstacles)
Did this obstacle cause:

 o Innovation and improvement not being structural ☑ Yes

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))
As mentioned above is a long term view very helpful for driving and direction innovations. But for many companies, especially the smaller ones, it is hard to develop good strategic plans. The economy can be very volatile and uncertain pressurizing companies to focus on achieving today’s goals instead of tomorrows.

A factor driving as well as impeding innovation is the importance of logistics as perceived by the whole organization. In our company the power of the purchase function has traditionally been rather substantial. A situation like this is impeding a focus on continuous improvement in our logistics. By definition is the separated, functional approach an important cause of sub-optimization. But over the years the role of logistics has become more and more valuable to the company. Not only in terms of operational performance but also in the perception of the other functions. This increased sense of urgency will stimulate an improving attitude toward logistics.

Please rank the mentioned obstacles of innovation in most important, second important and third important.

And

Please explain your answers.

1. Operational performance (pressure of achieving the goals of every day business)
2. Lacking sense of urgency
3. Organizational rigidities (non innovative culture, lack of company knowledge)

Have there been innovation projects/ activities in cooperation with customers and/or suppliers in the last three years?

Yes. For example we are in the middle of a new strategic cooperation with our forwarder.

Do you know of any company in your branch / market that started and innovation project / activity in cooperation with customers and/or suppliers in the last three years?

And

What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?

And

Please explain your answers.

As I mentioned before, we approach doing business from a cost leadership point of view. This approach in combination with the desire to be in control throughout our supply chain, forms the basis of innovation in cooperation with our partner. The meetings between the two parties are project based and will decrease in frequency as time passes by.
Please rank the mentioned drivers of innovation in most important, second important and third important.

Please explain your answers.

1. Long term view
2. Financial reasons  (cost reduction)
3. Customer orientation (“surprising”)

Additional questions on the cooperation / (strategic) alliance:

Is there also cooperation in other areas:  
Joint investments?  No 
Information exchange?  Yes 
Etc 

What party initiated the cooperation?  Our company

Was it a voluntary or coerced cooperation?  Voluntary

What factors are impeding your company / branch to innovate in cooperation with customers and/or suppliers? (obstacles of cooperative innovation)

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

Although supply chain management is a managerial hype, many companies do not know what supply chain management is. In many cases it is used as a synonym for logistics. Knowledge and experience of the whole principle of thinking in terms of supply chains, the possible benefits of operating as a supply chain and the control of a supply chain is lacking in most companies.

Like most companies we also like to maintain our independence; the freedom to change partners/suppliers whenever we want to. For this reason we limit joint investments as much as possible.

From my point of view companies want to protect their “business secrets”. They do not want other companies to have information about how they do business and with whom. I feel that in many cases this is not a rational argument because most of this information is already free obtainable. But it will hold companies back to start innovation processes in cooperation with partners.
And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Organizational support (Lack of conceptual knowledge)
2. Independence
3. Organizational rigidities (protecting business secrets)
Company / organisation: Consultancy 1 (C1)

Date interview: 9 May 2008

Firm characteristics:

- Short description of function and capabilities

Consultancy:

Our consultancy is specialized in offering clients (internal) logistic solutions to improve the outputs of their operations (i.e. cost reduction, operational performance improvement and capacity enlargement).

What factors are driving organisations in your branch / market to innovation?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

Basic cost reduction remains the most important reason why firms start with innovation activities. In the near future the strong rise of transportation cost (oil prizes) will be an extra stimulation for companies to keep improving their logistics. (financial issues and environmental uncertainties)

Legislation in different areas is an upcoming factor that drives firms to innovate. For example legislation on hygiene (i.e. HACCP) and environment protection (i.e. CO2 reduction and packaging). This kind of environmental uncertainties form on given times a strong urge to innovate.

Other environmental uncertainties, as shortage of skilled personnel, can also have their influence. For example a company that starts experimenting with the introduction of welding-robots to be able to survive the expected shortage of skilled welders.

Firms are changing the way they approach logistic services. Producers and suppliers of product extend their product they offer from just supplying the product to supplying the product and offering a series of logistic and maintenance services. (more involvement in the life cycle of products).

Firms also like to be in control. Being able to know what is happening why and how in every part of their company. In operations as well in logistics.

And of course the influence of customer demands. Companies depend on the wishes of their customers.
Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Financial reasons (cost reduction)
2. Customer orientation
3. Legislation (i.e. hygiene and environmental protection) (depending on period and branch)

What factors in your branch/ market are impeding innovation? (obstacles of innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

Firms find it hard to translate good ideas into good and feasible plans. This is amongst others caused by the fact that most companies are faced with a “concrete layer” within their organisation. A group of employees mostly found in middle management, that is resisting change/improvement. Whatever idea or plan is presented they focus on the negative issues.

The separated, functional visions still present within a lot of companies is also hampering innovation. Employees are chasing goals just for their own department (purchase, production, sales, logistics etc) but not focussing on the best outcome for the company as a whole.

The popularity of lean management is also causing situations which leave little room for innovation. All employees are being “used” to their maximum capacity leaving no capacity for innovation/improvement activities. Because of this maximization off the use of available capacity, companies feel the pressure of achieving the goals of the every day business.

In many cases the organisation (management) does not have the sense of urgency. And when the sense of urgency is missing, no action will be taken to innovate.

Low skilled/educated personnel can have trouble to reach a needed level of abstraction. They are because of that not always able to look over the boundaries of their own work / department.

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Operational performance (pressure of every day business)
2. Organizational support (lack of sense of urgency)
3. Organizational rigidities (“concrete layer”, not being able to translate ideas into plans)

What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?

And
Please explain your answers.

We hardly see this happening in the companies we work with. In some branches that are involved in highly certified processes/products such as medical supplies and the automotive industry this kind of intimate cooperation is more common.

Please rank the mentioned drivers of innovation in most important, second important and third important.

What factors are impeding your company/branch to innovate in cooperation with customers and/or suppliers? (obstacles of cooperative innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

We sometimes suggest forms of cooperation between a company and its suppliers/customers but most of the time they do not follow our suggestions on this matter. The most important argument is they perceive the advantages as too limited. (sense of urgency)

Another obstacle is independency. Especially companies of the size we do business with are reluctant to give of (are have the feeling to be giving up) their independency by developing such intimate forms of cooperation with other companies. They want to keep their freedom in choosing their suppliers. And how to divide the costs and revenues of collaborative improvement is also a though problem to tackle.

Also of some influence is the functional way communication normally takes place between firms. Most communication runs through sales/purchase employees and not through (logistic) managers.

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Organizational support (sense of urgency)
2. Independency
3. How to divide the costs and revenues between the partners
Drivers and obstacles for innovation in Logistics: Case studies in Dutch Logistics

Company / organisation: Consultancy 2 (C2)
Date interview: 8 May 2008

Firm characteristics:

- Short description of function and capabilities

Consultancy:

The market continuously asks for new products. As a result, companies are forced increasingly to show more flexibility. They must scale up and slim down without any problems. Furthermore, cost reduction must be worked on continuously. That imposes enormously stringent requirements for the production processes. For the continual improvement of these processes companies are increasingly turning to service providers like our company.

What factors are driving organisations in your branch / market to innovation?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

Despite the bad sentiments the economy is still booming. Being able to grow and meet the market demands is an important driver for many companies to embark on innovation activities. (operational performance).

Another driver for innovation is cost reduction. Companies want to be more efficient and reduce their wastage to a maximum. The purpose is of course to achieve a bigger positive financial result. (financial issues).

Today’s market is completely different from the one 15 years ago. Just cost reduction is not going to do the job anymore. Markets / customers are much more demanding. The generally accepted standard is in many ways much higher. Look for example at the back of an express delivery truck. It is full of promising services (i.e. package pick up at any favourable time and delivery the next day before 9 o’clock). This type of high services have become the standard in the last decade. Being able to meet these high and rapidly changing demand firms needs to start en keep on innovating. (customer orientation)

The impact of government support programmes for innovation is rather limited. There are even companies that reject government funding to avoid all the “fuss” that comes with it. From our experience are project of companies that only start with innovation activities to receive funding mostly far from successful. On the other hand does the government arrange congresses and seminars which have a positive influence on the “innovation-climate”. Simply the contact established between innovators and non-innovators is stimulating for innovation.
A last factor of importance is the “rumour of success”. Directors and managers pick up stories about very successful innovation processes/projects and decide they want to share in these successes. (continuous) Improvement is kind of a managerial hype.

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Customer orientation
2. Operational performance (growth → doing more with the same resources)
3. Financial reasons (cost reduction)

What factors in your branch/market are impeding innovation? (obstacles of innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

Many managers are very cautious when it comes to investing in innovation. They experience great difficulty in estimating or calculating the benefits of the (continuous) innovation process. And for that reason they keep on focussing on the costs and risk what simply blocks the way to continuous innovation.

Another obstacle of innovation can be found in the pressure of the daily business processes. Especially smaller companies without an R&D function find it hard to dedicate time and effort in innovation activities. (operational performance)

For successful innovation is a long term view a necessity. Many managers are lacking this long term view resulting in a reluctance to embark on innovation activities that will not directly show results.

In some ways can existing IT also form an obstacle of innovation. When companies have invested large amounts of money and time in restructuring their processes and constructing IT functionalities to support it, it can over the years hamper the company to innovate. Because of the large amount of money invested and because many (older) IT systems cannot easily be adjusted or expanded.

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Financial reasons (costs and risk)
2. Operational performance (pressure of the every day business)
3. Short term view

(the factors mentioned above are hard to rank. Different firms encounter them in different ways and with different severity.)
What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?

And

Please explain your answers.

In logistic services are the customer demands probably the number one reason to start innovating in cooperation with suppliers / customers. And meeting the demands of customers is strongly connected with the competition on the market. Especially in branches with a non unique product and low entering barriers like the transport business.

It also seems to be a managerial trend to reduce the amount of suppliers. A smaller amount of suppliers pushes firms to a more intimate form of cooperation. Including cooperation in innovation.

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Customers orientation
2. Competition
3. Supplier reduction

What factors are impeding your company / branch to innovate in cooperation with customers and/or suppliers? (obstacles of cooperative innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

A long term vision is a necessity for cooperative innovation just as it is for internal innovation. A vision focussed on short term revenues will block cooperative innovation.

Again can IT systems form an obstacle of (cooperative) innovation. When companies have invested large amounts of money and time in restructuring their processes and constructing IT functionalities to support it, it can over the years hamper the company to innovate in cooperation with suppliers / customer. Because of the large amount of money invested and because many (older) IT systems cannot easily be adjusted, expanded or connected with suppliers / customers.

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Short term vision
2. Existing IT systems / investments
Company / organisation: Consultancy 3 (C3)

Date interview: 8 May 2008

Firm characteristics:

- Short description of function and capabilities

Consultancy:

The market continuously asks for new products. As a result, companies are forced increasingly to show more flexibility. They must scale up and slim down without any problems. Furthermore, cost reduction must be worked on continuously. That imposes enormously stringent requirements for the production processes. For the continual improvement of these processes, companies are increasingly turning to service providers like our company.

What factors are driving organisations in your branch / market to innovation?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

Despite the bad sentiments, the economy is still booming. Being able to grow and meet the market demands is an important driver for many companies to embark on innovation activities. (operational performance).

Another driver for innovation is cost reduction. Companies want to be more efficient and reduce their wastage to a maximum. The purpose is of course to achieve a bigger positive financial result. (financial issues).

Today’s market is completely different than the one 15 years ago. Just cost reduction is not going to do the job anymore. Markets / customers are much more demanding. The generally accepted standard is in many ways much higher. Look for example at the back of an express delivery truck. It is full of promising services (i.e. package pick up at any favourable time and delivery the next day before 9 o’clock). This type of high services have become the standard in the last decade. Being able to meet these high and rapidly changing demand firms needs to start and keep on innovating. (customer orientation). Especially demands for shorter lead times and demands for increased product and volume variety i.e. demand for more flexible processes are changes in the market.

The impact of government support programmes for innovation is rather limited. There are even companies that reject government funding to avoid all the “fuss” that comes with it. From our experience projects of companies that only start with innovation activities due to funding possibilities, are mostly far from successful. On the other hand does the government arrange congresses and seminars which have a positive influence on the “innovation-climate”. Simply the contact established between innovators and non-innovators is stimulating for innovation.
A last factor of importance is the “rumour of success”. Directors and managers pick up stories about very successful innovation processes/projects and decide they want to share in these successes. (continuous) Improvement is kind of a managerial hype.

And

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Operational performance (growth → doing more with the same resources)
2. Financial reasons (cost reduction)
3. Customer orientation

What factors in your branch/ market are impeding innovation? (obstacles of innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

Many managers are very cautious when it comes to investing in innovation. They experience great difficulty in estimating or calculating the benefits of the (continuous) innovation process. And for that reason they keep on focussing on the costs and risk what simply blocks the way to continuous innovation.

Another obstacle of innovation can be found in the pressure of the daily business processes. Especially smaller companies without an R&D, process improvement / engineering function find it hard to dedicate time and effort in innovation activities. (operational performance)

For successful innovation a long term view is a necessity. Many managers are lacking this long term view resulting in a reluctance to embark on innovation activities that will not directly show results.

In some ways existing IT also form an obstacle of innovation. When companies have invested large amounts of money and time in restructuring their processes and constructing IT functionalities to support it, it can over the years hamper the company to innovate. Because of the large amount of money invested and because many (older) IT systems cannot easily be adjusted or expanded.

And

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Financial reasons (costs and risk)
2. Operational performance (pressure of the every day business)
3. Short term view
What factors are driving your company / branch to innovation in cooperation with customers and/or suppliers?

And

Please explain your answers.

In logistic services the customer demands are probably the number one reason to start innovating in cooperation with suppliers / customers. And meeting the demands of customers is strongly connected with the competition on the market. Especially in branches with a non unique product and low entering barriers like the transport business.

It also seems to be a managerial trend to reduce the amount of suppliers. A smaller amount of suppliers pushes firms to a more intimate form of cooperation. Including cooperation in innovation.

Please rank the mentioned drivers of innovation in most important, second important and third important.

1. Customers orientation
2. Competition
3. Supplier reduction

What factors are impeding your company / branch to innovate in cooperation with customers and/or suppliers? (obstacles of cooperative innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

A long term vision is a necessity for cooperative innovation just as it is for internal innovation. A vision focussed on short term revenues will block cooperative innovation.

Again can IT systems form an obstacle of (cooperative) innovation. When companies have invested large amounts of money and time in restructuring their processes and constructing IT functionalities to support it, it can over the years hamper the company to innovate in cooperation with suppliers / customer. Because of the large amount of money invested and because many (older) IT systems cannot easily be adjusted, expanded or connected with suppliers / customers.

Please rank the mentioned obstacles of innovation in most important, second important and third important.

1. Short term vision
2. Existing IT systems / investments
Drivers and obstacles for innovation in Logistics: Case studies in Dutch Logistics

Company / organization: Consultancy 4 (C4)

Date interview: 28 May 2008

Firm characteristics:

- Short description of function and capabilities

Consultancy:

(semi-) Government organization aiming to develop the investment- and innovation-climate in the northern provinces of the Netherlands.

Key words: advice, knowledge sharing, government funding and network development

What factors are driving organizations in your branch / market to innovation?

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

The customer demands determine for a great deal the improvements activities of logistic firms. The hard competition in the logistics sector increases the power of customers. The logistics sector can also be characterized as a following sector. The industry is the renewing sector and the logistics sector is mainly following these developments. Especially in the region we operate where the transportation streams are rather thin.

Another important driver of innovation is the way that logistic firms are linked to their clients. When companies view their logistic partners as an important lever to achieve their strategic plans, they will challenge these partners to develop and improve their processes together. We have recently seen a very successful example of a strategic cooperation. Both parties (a production company and a logistics service provider) are reaping the financial profits of the cooperation and ask themselves why they have not started such a cooperation years ago.

The competition in the logistics sector is brutal and the revenues often very thin. Most of the smaller companies are just trying to keep their business going. They are lacking the ambition to want more and the strategy to achieve more. Many “innovations” are nothing more than the adoption of the new market standards in an attempt not to be overrun by the competition.

A very likely, upcoming driver of innovation would be the expectation that in the years to come the whole demand for transportation of goods will double.

Of course there are other factors driving innovation in the logistics sector. A well known large chip manufacturer organizes its activities according to the QLTC (quality, logistics, technology and cost) model. Companies in logistics services are pushed towards innovation by the same factors.
But next to the question what drives innovation in logistics we have to say that we from our point of view, (continuous) innovation and improvement in the logistics sector is a rare phenomenon.

Our organization approaches companies to participate in networks and in problem solving circles. Our organization also facilitates promising cooperation, investment and innovation project through government funding and knowledge sharing. When you approach a random group of companies in this region they will probably not tell you that their most important driver of innovation is government support and encouragement. But our work does function as a facilitator of innovation and in many cases as an eye-opener. Companies that end their involvement in our projects mostly feel that there is no longer an urgency to participate.

What factors in your branch/ market are impeding innovation? (obstacles of innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

The importance of logistics differs in every branch. In some branches is the impact of logistics in terms of costs and operational performance very limited. And therefore is the urge to put time in effort in improving logistics also very limited. There is simply a low sense of urgency. It is a possibility that now the oil prizes are reaching record heights the importance of logistics will increase in some branches.

As mention before, the competition in the logistics sector is brutal and the revenues often very thin. Most of the smaller companies are just trying to keep their business going. They are lacking the ambition to want more and the strategy to achieve more. In some exceptional cases a company steps out of the box and manages to be successful in for example a niche market. And when they do develop an ambitious strategy there is the question of available funds. From our experience only the larger logistic service providers are financially able to start innovation processes and keep them going.

Many companies are run by entrepreneurs. They know how to do business and they know how to approach customers. But most often they do not know how to “manage” their organizations; How to streamline their processes and how to continuously improve their operations. This is partly caused because “managing” is not in their genes and partly because they lack the right education. The most successful companies are the ones who are able to work with the right mix of entrepreneurs and managers.

Have there been innovation projects/ activities in cooperation with customers and/or suppliers in the last three years?

Yes (see example of cooperation between production company and logistics service provider)

Do you know of any company in your branch / market that started and innovation project / activity in cooperation with customers and/or suppliers in the last three years?
And

Please explain your answers.

Every branch has its visionaries. They are able to look past the pressure of today’s business and scan the future for opportunities. Another recent example of “future thinking” is the development of a network of “truck cities”. These cities are full service truck stops providing not only eat and sleep facilities for the drivers but also truck maintenance and trailer protection facilities. The founders of this projects see trucks slowly developing into a same sort of assets as airplanes are nowadays; the asset trucks has to be operational 24 hours a day and the operating crew is regularly changed to make this possible.

What factors are impeding your company / branch to innovate in cooperation with customers and/or suppliers? (Obstacles of cooperative innovation)

And

Please explain your answers. (Backgrounds and sources of the mentioned factors (push-pull en external-internal))

As mentioned before, many companies are run by entrepreneurs. They know how to do business and they know how to approach customers. But most often they do not know how to “manage” their organizations, let alone that they are able to think over the boundaries of their own company and find successful strategies in cooperation with suppliers and / or customers. Add to this situation the fact that the competition in the logistics sector is very hard and you have the right formula for maximum impediment of innovation in cooperation with suppliers and / or customers.

Many companies in need for logistic services are mainly focused on basic cost reduction. They want to keep their freedom to “shop” for the cheapest provider and not commit themselves to some sort of alliance. Often the lacking trust between companies and the non-cooperative attitude towards the other company is holding collaborative improvement back.