

*LogOn Baltic Regional reports*  
35:2007



## **LOGISTICS SURVEY IN SOUTHWEST FINLAND**

**Tomi Solakivi**



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# LOGISTICS SURVEY IN SOUTHWEST FINLAND

Tomi Solakivi

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Rehtorinpellonkatu 3, FI-20500 TURKU, Finland

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## EXECUTIVE SUMMARY

Average logistics costs of manufacturing companies in South West Finland are between 14% (micro companies) and 9% (large companies) of turnover. The level of costs is high, but not higher than the national cost level.

Logistics costs of trading companies are high, even higher than the national level. Part of the explanation can be that the respondents in the region seem to be concentrated on such industries that have the highest costs in the national level as well.

Logistics costs are expected to rise in the future. Especially the transportation costs that are already relatively high are expected to be on the rise.

At the moment, transportation and freight forwarding are the most commonly outsourced logistics functions. The future trend of outsourcing will be on the logistics IT-systems, invoicing and functions related to material management, such as warehousing.

The most important development needs of manufacturing and trading companies seem to be related to the competence of company's personnel, logistics IT-systems and naturally, meeting the challenge of cost efficiency.

The manufacturing and trading companies of the region seem to consider their location compared to competitors as problematic. Only around 40% of respondents consider their location as good or very good. Some 30% of companies in the Salo region seem to be satisfied with their location compared to competitors, whereas the share in Loimaa region is around 60%.

The field of logistics service provision is changing from individual services towards more complex service packages. The question of the future remains, how will the smaller service providers be able to meet the changing demand? If they will not be able to meet the challenge, the logistics service markets will most likely be concentrated towards a market dominated by a small number of large service providers.



## TIIVISTELMÄ

Varsinaissuomalaisten teollisuusyritysten logistiikkakustannukset vaihtelevat mikroyritysten 14 prosentista suurten yritysten 9 prosenttiin liikevaihdosta. Kustannusten taso on kansainvälisesti vertaillen melko korkea, mutta suurin piirtein samalla tasolla kuin kansalliset luvut.

Kaupan alan yritysten kustannukset ovat tulosten perusteella jonkin verran korkeammat kuin alan yritysten kustannukset Suomessa keskimäärin. Osaselitys Varsinais-Suomen korkeille kustannuksille saattaa olla vastaajien keskittyminen juuri niille toimialoille, joilla kustannukset ovat muutenkin korkeammat.

Logistiikkakustannusten odotetaan nousevan myös tulevaisuudessa. Erityisesti nousupaineita näyttäisi olevan jo ennestään korkeiden kuljetuskustannusten osalta.

Tällä hetkellä yleisimmin ulkoistettuja logistiikkatoimintoja ovat kuljetukset ja huolinta. Tulevaisuudessa eniten kasvua on odotettavissa logistiikan tietojärjestelmien, laskutuksen ja materiaalihallintoon liittyvien toimintojen, kuten varastoinnin ulkoistamisessa.

Yritysten tärkeimmät kehitystarpeet logistiikan osalta ovat kyselyn tulosten perusteella henkilöstön osaamisen kehittämisessä, tietojärjestelmissä ja luonnollisesti kustannusten kurissa pitämisessä.

Teollisuuden ja kaupan yritykset näyttävät pitävän sijaintiaan verrattuna kilpailijoihin jossain määrin ongelmallisena. Ainoastaan noin 40 % yrityksistä pitää sijaintiaan kilpailijoihin verrattuna hyvänä tai erittäin hyvänä. Varsinais-Suomen sisällä tyytyväisyys vaihtelee Salon seudun noin 30 % ja Loimaan seudun noin 60 prosentin välillä.

Logistiikkapalveluiden markkinat näyttäisivät muuttuvan yksittäisten palveluiden markkinoista kohti monimutkaisempien palvelukokonaisuuksien markkinoita. Oleellinen tulevaisuutta käsittelevä kysymys onkin, kuinka pienemmät palveluntarjoajat pysyvät mukana markkinoiden muutoksessa. Mikäli ne eivät pysty vastaamaan haasteeseen, logistiikkapalveluiden markkinat tulevat todennäköisesti keskittymään suurelta osin muutamalle suurelle palveluntarjoajalle.





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# INTRODUCTION

The LogOn Baltic project was approved within the Baltic Sea Region (BSR) INTERREG III B Neighbourhood Programme, which is sponsored by the European Regional Development Fund (ERDF), as part of the Structural Funds, and co-financed by national project partners.

The purpose of LogOn Baltic is to present solutions to improve the interplay between logistics and Information and Communication Technologies (ICT) competence and spatial planning and strengthening Small and Medium-sized Enterprises (SMEs) competitiveness in the BSR. This is primarily done by the production and dissemination of information for regional development agencies on how to support enterprises in the participating regions in the field of ICT and logistics, thus improving regional development.

The following regions are participating in the project:

- South-West Finland
- Östergötland (Sweden)
- Denmark
- Southern Metropolitan Region of Hamburg (Germany)
- West-Mecklenburg (Germany)
- North-East Poland
- Lithuania
- Latvia
- Estonia
- St. Petersburg (Russia)

LogOn Baltic provides an overview of logistics efficiency and logistics information systems and their exploitation, in order to improve the interaction between SMEs and other public/private actors.

On the one hand, the empirical activities of LogOn Baltic compare the existing logistics services and infrastructure with the logistics needs in the participating regions, making it possible to develop perspectives and action plans for strengthening the logistics competence in the regions. On the other hand it describes the existing ICT infrastructure and services, revealing up to what extent they meet with the companies' needs for further development. In this way, LogOn Baltic focuses on:

- a. identifying development agencies and evaluating their performance in each region
- b. evaluating the level of logistics and ICT efficiency
- c. suggesting concrete actions for regional and local public sector bodies

Data are gathered in each participating region using four tools, Development Measure Impact Analysis (DEMIA), Logistics survey, ICT survey and Expert Interviews; each of these is presented in a separate report. These results together with secondary data is presented in a regional report, that will describe the state of affairs in the region, with recommendations on what and how the region needs to develop. The regional reports are used as a basis for making an interregional comparison which is reported in an inter-regional report. All reports are available on the project homepage, [www.logonbaltic.info](http://www.logonbaltic.info).

## 1.1 Regional partner introduction

The regional partners in Finland are:

- Turku School of Economics (Lead Partner)
- Development Centre of Salo Region
- ICT Turku Ltd
- Loimaa Regional Development Centre
- Pilot Turku Ltd
- Regional Council of Southwest Finland
- TEDIM Telematics, Education, Development and Information Management
- Turku Region Development Centre
- University of Turku, Department of Geography

**Turku School of Economics (TSE)** is a public university in the field of business science. Project management is with the TSEBA Logistics (staff of 15), with extensive research and policy-making experience. Other contributing units comprise SME Institute, Pan-European Institute specialising in Russian markets & Finland Futures Research Centre, researching alternative futures and related challenges/opportunities in policy making, incl. regional planning foresight studies. TSE Project Unit has worked in over 100 EU co-funded projects.

**Development Centre of Salo Region** is an organisation owned by 11 municipalities. It provides regional development and co-operation related services for its owners. It consists of units of regional



development, enterprise services and municipality services. It benefits from the project through information on possibilities to develop logistics and ICT competence in the region with a strong telecommunications industry cluster. It serves as dissemination and data collection channel with local businesses. Logistics-related spatial planning is one of its current key priorities.

**ICT Turku Ltd.** is part of Turku Science Park and a cluster focused on information and communications technology. The goal of ICT Turku is to develop the ICT cluster in Southwest Finland into an internationally successful entity of actors. The goal of ICT Turku is perfectly in line with the project objectives. It has a network comprised of more than 1400 companies and units of the ICT field which will be used as dissemination and data collection channel. ICT Turku has participated in Interreg II C projects E-18 co-operation and Baltic Palette.

**Loimaa Regional Development Centre** is a business service unit owned by 10 municipalities. It works with regional development and aims at enhancing preconditions for a diverse business environment. It gets rigorous information about the possibilities to develop logistics and ICT competence in the semi-rural region and serves as dissemination and data collection channel to the local businesses. Logistics-related spatial planning is one of its current key priorities.

**Pilot Turku Ltd** is a development company owned by the City of Turku. It focuses on promoting the international logistics operations in the Turku Region. The purpose of the organisation is to provide the customers with a single service channel for contacting all decision-makers and actors, thus lowering the thresholds of language, culture and bureaucracy. Pilot Turku provides its logistics competence and contacts to the project. It also serves as a dissemination channel and data collection channel to the local businesses. They have previously participated in Interreg projects NeLoC and InLoC.

**Regional Council of Southwest Finland** is a joint municipal authority which functions in accordance with the principles of municipal self-government, operating as the authority on regional development as well as the region's planning and lobbying organisation. In LogOn Baltic especially Regional Council's knowledge on the regional spatial planning will be an essential part. The Council also is a direct connection to other local authorities and policy makers. At the moment they are hosting the South Finland Coastal Zone Interreg IIIA Programme.

**TEDIM** is a joint organ of the Ministries of Transport around the Baltic Sea. It is a development forum for (i) logistics co-operation between the EU and Russia, as well as between the EU Member States, (ii) dissemination of best practices in transport and logistics and (iii) use of telematics in transport and logistics. A hallmark of TEDIM projects is a unique co-operation between private and public sector. TEDIM joins as an advisory partner with the main task to reach out to all Ministries of Transport in the BSR with LogOn Baltic results.

**Turku Region Development Centre** is a public development organisation comprising 18 municipalities in Southwest Finland. TAD Centre's main objective is to create an environment that promotes dynamic enterprise activities in Turku region and to co-ordinate business policies in the region. TAD Centre participates and co-ordinates strategic development projects to support and create the growth in the region, incl. many logistics and ICT projects. TAD Centre has been a partner in several EU projects, including Interreg project the Baltic Business Network and ESR project HighTech Way.

**Department of Geography at University of Turku** brings research competence on regional planning and GIS-analysis into the project. The Department's extensive applied research provides society with specific regional knowledge to fulfil the needs of planning and decision-making. Urban geography is one of the strongest fields of research, including different research programmes of future urban developments and urban renewal processes, so this is an opportunity to exploit the knowledge in practice.

## 1.2 Logistics survey introduction

The survey is one of four tools for primary data collection, reflecting the current status and needs of logistics in the business community in the region. Three versions of the survey have been used, focusing on the following three types of companies:

- a. Manufacturing/construction companies
- b. Trading companies
- c. Logistics service providers

The questionnaires consists of two parts: one part with general questions (being the same for the three types of companies), and another part with specific questions concerning the type of companies mentioned above. The same questionnaire has been used in all regions. Each region has had the opportunity to add one or two

questions focusing on specific regional issues. The regional reports will therefore differ slightly.

The survey is mainly conducted as a web-based survey, but mail surveys, phone surveys and interviews has also been used as a complement in some regions.

This is by far the largest survey conducted in the Baltic Sea Region in the field of logistics. In this report data and analysis will be presented for one region only.

The data is also used to make a cross-regional analysis, focusing on differences and similarities between the regions. The cross-regional analysis is presented in a separate report available at the project homepage [www.logonbaltic.info](http://www.logonbaltic.info).



## 2 SURVEY DESIGN

This report is based on the structure and data of the fourth national Finnish logistics survey, commissioned by the Ministry of Transport and communications Finland in 2006. The data was collected in March-April 2006 with a help of a web-based questionnaire, which was sent to over 16 000 potential respondents in Finland. Overall, the Finnish logistics survey received 2255 responses, of which 322 were from companies located in South-West Finland.

### 2.1 Target group and sample

Figure 1 presents the distribution of Logistics survey according to company size.

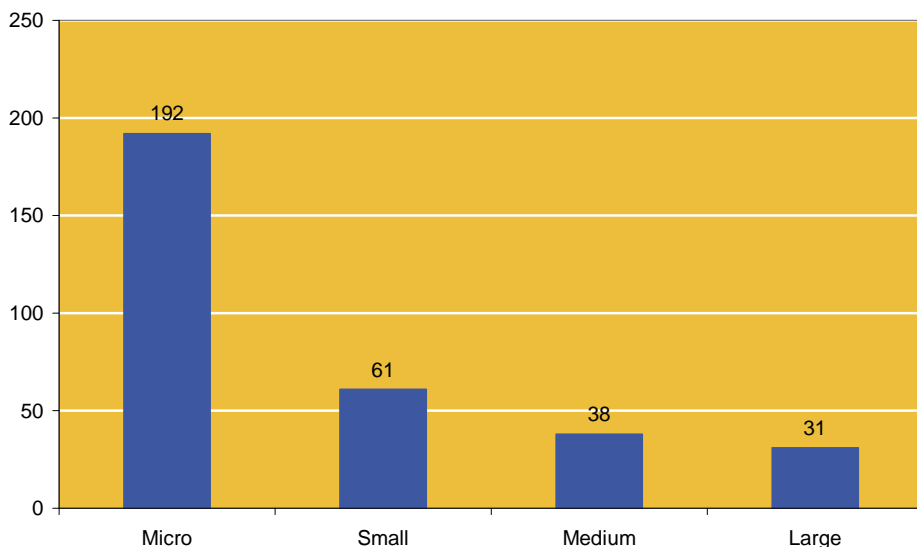


Figure 1 Number of respondents according to company size

From the figure can be seen that the majority (192) of companies that have answered the survey are so-called Micro-size companies with annual turnover of less than 2 million euros. In addition there are

61 responses from small companies, 38 responses from medium-sized companies and 31 responses from large companies. Since most of the companies in Finland are SMEs the distribution seems to match rather well the structure of Finnish business.

As can be seen from figure 2, the responses are divided between the different main industries so that there are 141 responses from manufacturing companies, 117 from trading companies and 64 responses from logistics service providers.

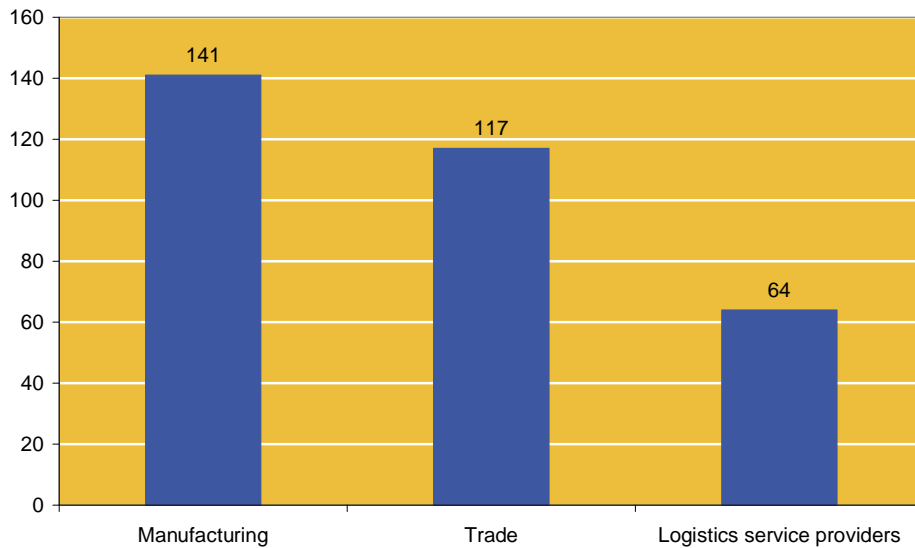


Figure 2 Number of respondents according to main industry

The respondents were also asked to identify their position (senior management, middle management, operational staff or expert) within the company they were answering for. Figure 3 presents the distribution of respondents between these different positions.

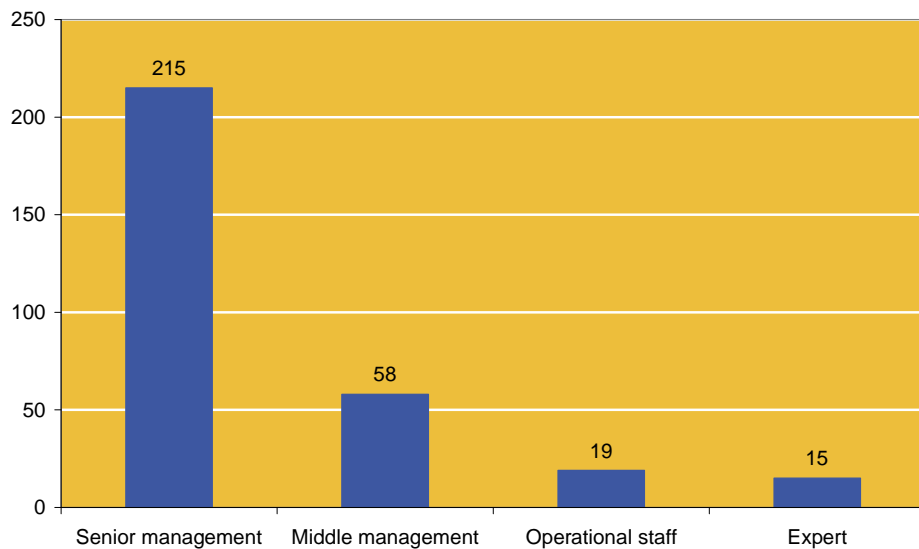


Figure 3 Number of respondents according to respondent's position in the company

As can be seen, most of the respondents have identified themselves to be senior management of the company. This can mostly be explained by the fact that majority of the companies are micro companies, and thus the person answering the questionnaire has most probably been the owner of the company. What is positive is the low amount of respondents identifying themselves as operational staff. Even when excluding the smallest companies, one can with great comfort say that most of the respondents are either from managerial positions or working as experts in the company. This would indicate that the respondents in the survey should be well informed with what is the status of logistics in the company.

## 2.2 Main themes of the survey

The questions concerning manufacturing companies and trade companies are similar and will be reported in chapter 4. The findings from the logistics service providers will be reported in chapter 5.

The main themes of the survey are:

- Current logistics costs and their development
- Key logistics indicators, including lead times, and customer service

- The need for further competence development
- Outsourcing, the situation today and expected development within the firm
- Operating environment, an assessment of the regional pros and cons
- Self assessment of the company's logistics activities and to what extent they are coordinated.

### 2.3 International reference data

During the recent years, numerous surveys about different aspects of logistics have been performed and published (see for example Bordeaux Ecole de Management 2003, Naula et al. 2006 and IBM 2005). Unlike the LogOn Baltic survey, most of the available logistics surveys tend to have a rather narrow scope, focusing on a smaller set of themes such as logistics costs or outsourcing of different logistics functions.

#### 2.3.1 Logistics costs on national level

In 2005 Rodrigues, Bowersox and Calantone estimated the level of logistics costs in relation to the gross domestic product. Based on their survey from 2005, the logistics costs globally in 2002 were around USD 6,700 billion (approximately €6,450 billion), which would correspond to around 13.8% of global GDP. According to Rodrigues et al. the logistics costs have been decreasing around the world outside Europe. On the contrary, the logistics costs in some European countries have been rising at the same time.



Table 1 Global logistics costs in billion USD, % of GDP in selected areas of the world in 1997, 2000 and 2002 (Rodrigues, Bowersox and Calantone, 2005)

Region	1997		2000		2002	
	USD bill.	% of GDP	USD bill.	% of GDP	USD bill.	% of GDP
Europe	884	12,2 %	1100	12,8 %	1229	13,3 %
N. America	1035	11,0 %	1240	10,6 %	1203	9,9 %
Pacific Region	1459	14,5 %	1989	15,3 %	2127	15,7 %
S.America	225	14,3 %	280	14,4 %	272	14,3 %
Other areas	1492	15,4 %	1778	15,7 %	1902	16,0 %
Whole world	5095	13,4 %	6387	13,7 %	6732	13,8 %

Another estimate on the logistics costs on the national level is the estimate by The Council of Supply Chain Management Professionals (CSCMP, see [www.cscmp.org](http://www.cscmp.org)). The council estimates that India's logistics costs as 11% of its GDP and as much as 21% in the case of China. The level of logistics costs in the USA seems to have fallen from 14.5% to as low as 8% in the past 25 years. The CSCMP estimates that the logistics costs in Europe are somewhat higher, at least 11% of GDP (The Economist, 2006).

Table 2 Comparison of logistics costs in selected European Union countries. Billion USD & % of GDP in 1997,2000 and 2002 (Rodrigues, Bowersox and Calantone, 2005)

	1997		2000		2002	
	Billion USD	% of GDP	Billion USD	% of GDP	Billion USD	% of GDP
Belgium	27	11,4 %	33	11,6 %	35	12,1 %
Denmark	16	12,9 %	20	13,0 %	23	13,6 %
France	158	12,0 %	177	11,9 %	186	11,6 %
Germany	228	13,1 %	323	15,3 %	374	16,7 %
Greece	17	12,6 %	24	12,9 %	26	13,0 %
Ireland	8	14,0 %	19	15,3 %	21	14,9 %
Italy	149	12,0 %	167	11,8 %	186	12,2 %
Holland	41	11,9 %	50	11,8 %	56	11,8 %
Portugal	19	12,9 %	24	13,6 %	25	13,4 %
Spain	94	14,7 %	107	13,3 %	124	14,1 %
UK	125	10,1 %	157	10,7 %	174	11,3 %

### 2.3.2 Logistics costs on company level

Since 1982, the European Logistics Association (ELA) has together with the consulting company A.T. Kearney published a survey on logistics costs and other logistics related key variables. According to ELA, logistics costs as a share of companies' turnover has steadily decreased during 1987-2007 to a current level of some 6% of turnover. The results of the ELA –survey have to be interpreted with a bit of caution, though. The respondents of the survey, some 200 companies, are large, international companies with resources and competence to deal with logistics related issues and enjoy the possibilities of economies of scale and scope. In a sense, the results of the ELA – survey are not fully compatible with the results of the LogOn Baltic survey.

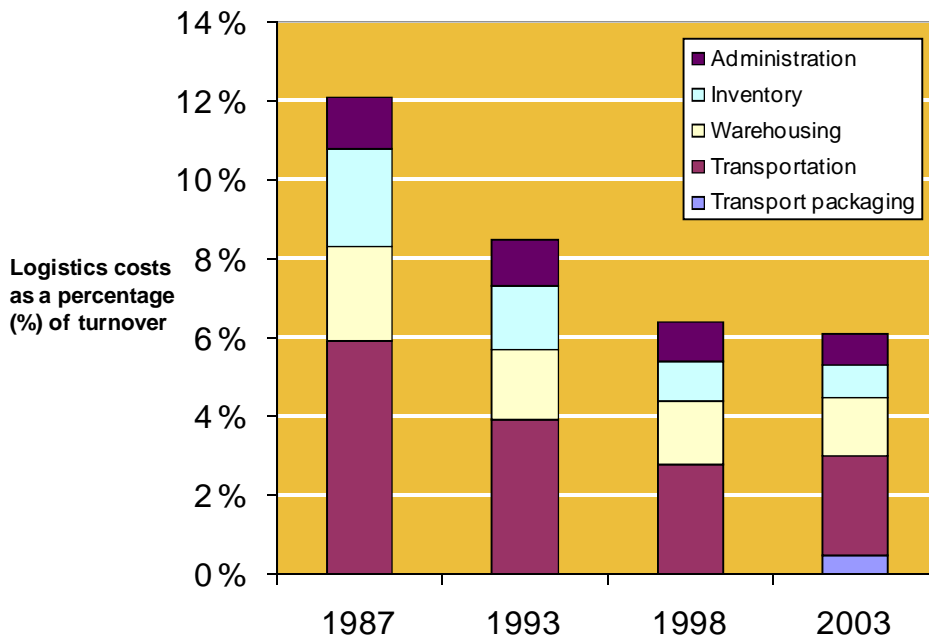


Figure 4 Logistics costs as a percentage of companies' turnover in the ELA/A.T. Kearney survey in 1987, 1993, 1998 and 2003 (European Logistics Association and A.T. Kearney, 2004)

### 2.3.3 Logistics outsourcing

Recent studies on logistics outsourcing and the development of logistics markets are for example Larson and Gammelgaard (2001) and Langley, Dort, Ang and Sykes (2005). According to the respective surveys, the common trend seems to be that the outsourcing of logistics operations is increasing rapidly around the world, although the current status and the pace of the development seem to vary across the different areas of the world. Outsourcing is also spreading to new areas of business and to a set of new logistics functions. Whereas the outsourcing of logistics has previously been mainly outsourcing of basic logistics operations such as transportation and warehousing, some new functions like logistics IT-systems will be growing in the future.

### 2.3.4 Location and operating preconditions

One of the dimensions of the LogOn Baltic study is the location of the company and the operating preconditions on the location. For example Gullander and Larsson (2001) have discussed the effect and significance of location and particularly its relation with the outsourcing of logistics. Logistics IT-systems have previously been discussed for example by Lai, Ngai and Cheng (2005).

## 2.4 National reference data

In this report the results are compared with the finding of the previous surveys conducted in Finland. The main sources are the previous national logistics surveys commissioned by the Finnish ministry of transport and communications in (see Ministry of Transport and Communications Finland 1992, 1997 and 2001). Most of all the survey results of South West Finland are compared with the results of the fourth national logistics survey conducted in 2006 (Naula, Ojala, Solakivi, 2006)



### 3 FINDINGS FROM MANUFACTURING AND TRADE

#### 3.1 Logistics costs

##### 3.1.1 Logistics costs Manufacturing

Figure 5 illustrates the logistics costs of manufacturing companies in South-western Finland according to company turnover. As can be seen from the figure, the total logistics costs vary from c.a. 15% of turnover of micro-sized companies to about 9% of turnover of large companies. This result is in line with the theory, since it is expected that larger companies have better resources, both tangible and intangible, to deal with different challenges.

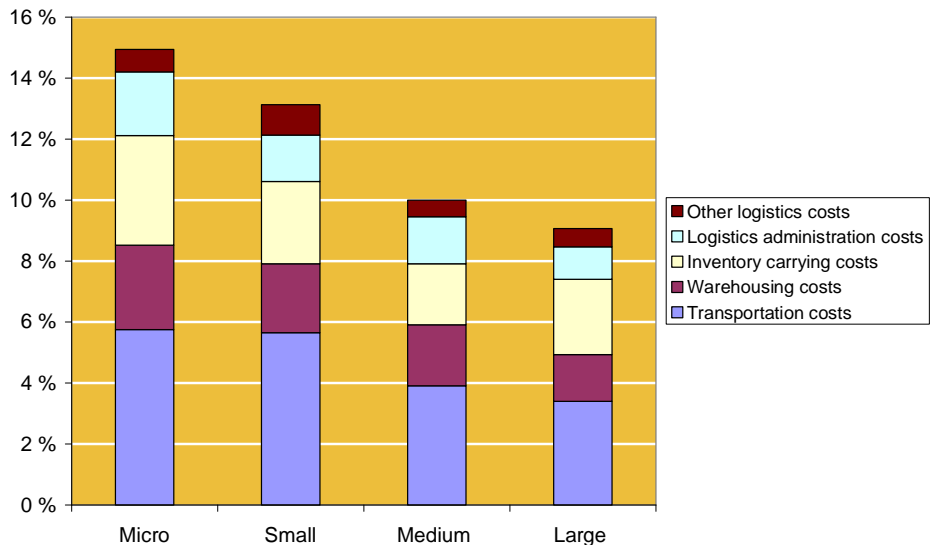


Figure 5 Logistics costs as a percentage of turnover, manufacturing companies

When compared with the results of latest Finnish national survey (see Naula et al. 2006), it seems that logistics costs in South West Finland are slightly lower than the national averages. This result can partly be explained by the industries the respondents in different region represent. The largest industries in South West Finland are for example machinery and equipment, which on the national level seem to have one of the lowest logistics costs.

In figure 6 the logistics costs of two of the largest industries, metals and machinery and electronics manufacturing are compared.

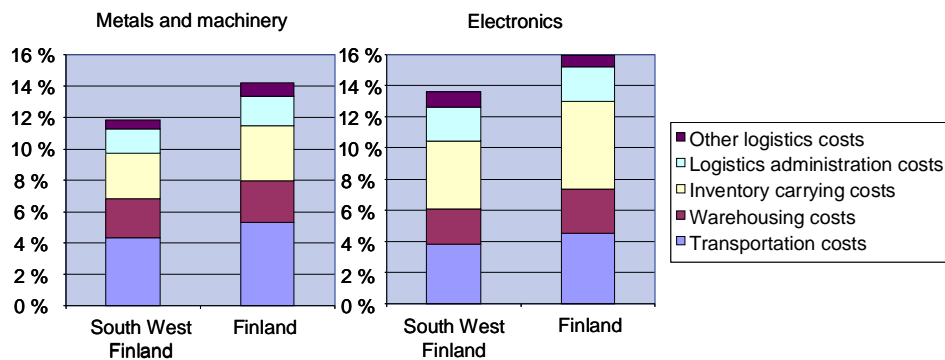


Figure 6 Comparison of logistics costs between South West Finland and country averages in some selected industries

As can be seen, the companies in South West Finland tend to have on average lower logistics costs as companies on the same industry in the rest of Finland. The largest difference seems to be on the transportation costs of companies on the metals and manufacturing industry, where the companies of South West Finland seem to have one percentage point lower transportation costs than companies from other parts of Finland.

At least as interesting as the current level of costs is the companies' views on how the different cost components will develop in the nearest future. Figure 7 illustrates the manufacturing companies' opinions on how they see the future of logistics costs.

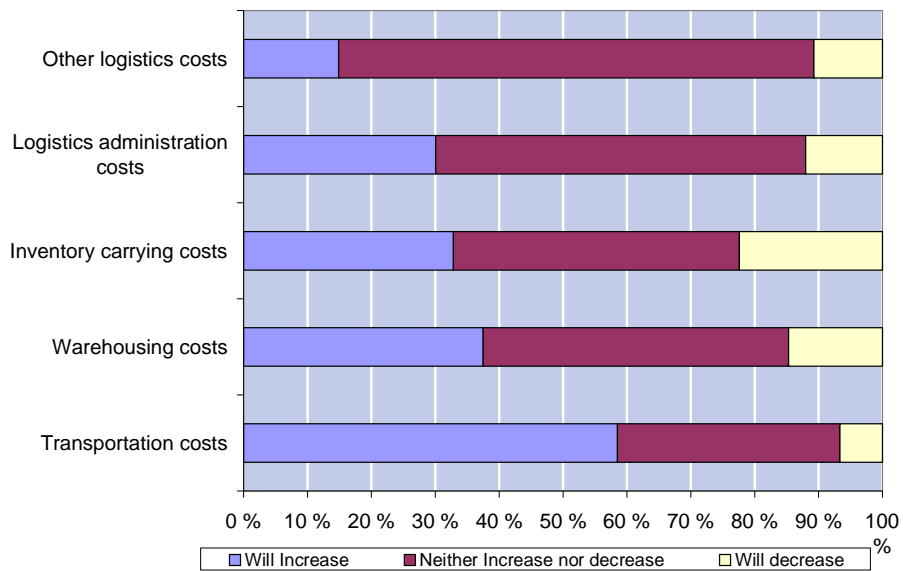


Figure 7 Estimate of the development of logistics costs, manufacturing companies

The majority of manufacturing companies seem to predict that the transportation costs will be rising in the future. This can partly be explained with the rising trend in the price of crude oil, but there are also other explanations. As can be seen from the figure, the views on the development of other logistics costs are not as harsh as the views on the development of transportation costs. This is partly because of the fact that the nature of business and the demands of customers are changing. There is a real effort in increasing the service level, which in practice means shorter order-delivery –times. This results in the fact that some of the other logistics costs, such as inventory carrying costs are simply shifted into transportation costs.

### 3.1.2 Logistics costs Trade

The logistics costs of trading companies seem to differ from the results of national survey. The level of total logistics costs (16-19% of turnover) is significantly higher than national level of 16-12%. Another difference is that unlike in the data covering entire Finland, the negative correlation between company turnover and the level of logistics costs is not clearly visible. In fact, in this data, the micro-size companies seem to have the lowest total logistics costs.

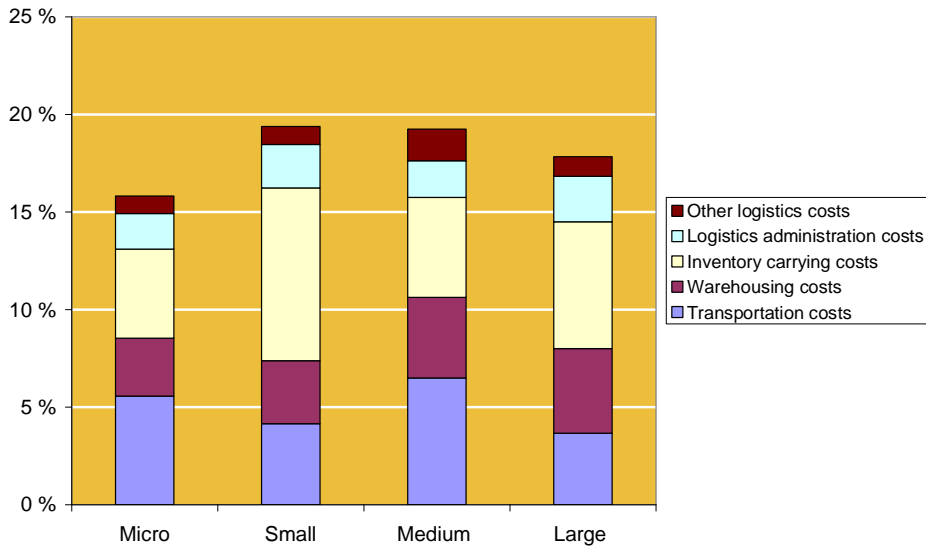


Figure 8 Logistics costs as a percentage of turnover, trading companies

A partial explanation to the high level of logistics costs might be the respondents' distribution into different industries. The majority of respondents seem to be from industries classified as wholesale (31.6%) or retail trade (36.8%) of other than food beverages and tobacco. In the Finnish national survey these industries had the highest logistics costs of all industries under the "trading" class.

The remarkably high level of inventory carrying cost in almost all size classes would seem to support this explanation.

The views on future development of different logistics costs would seem to be the same as the views of manufacturing companies. The companies are most pessimistic about the development of transportation costs in the future.



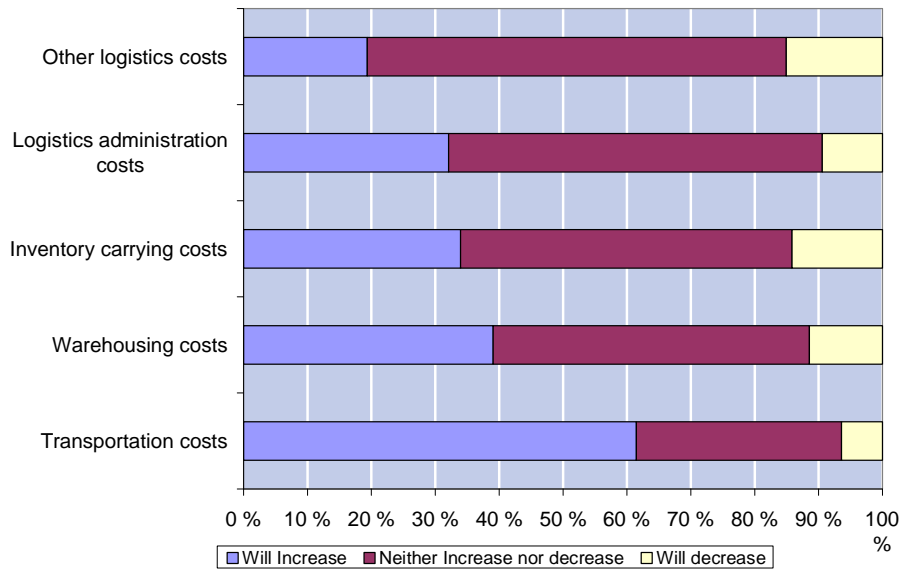


Figure 9 The estimate of the development of logistics costs, trading companies

Another observation worth mentioning is the rather large share of indecisive respondents in almost all cost components, whereas the share of “positive development” is very small. One could conclude that the views on transportation costs are clear and pessimistic, whereas there is great uncertainty about the future of other logistics costs.

### 3.2 Logistics competence

In the Finnish survey the question of logistics competence was handled with a bit wider perspective than in the LogOn Baltic –version of the survey. In the Finnish survey each respondent was asked to choose the most important development need of personnel competence of three different personnel groups, senior management, middle management and operational staff. To match the results of the LogOn Baltic survey, the data of the Finnish survey has been aggregated in this report by summing up the answers for all three personnel groups.

Figures 10 and 11 present the order of different personnel development needs of manufacturing and trading companies in south-western Finland. The two most important needs for the both main industries would seem to be related to material management, for they are “procurement and purchasing” and “inventory management”. It

seems that it is widely understood that there is great potential in developing the material flow of the company.



Figure 10 The development needs of personnel competence, manufacturing companies

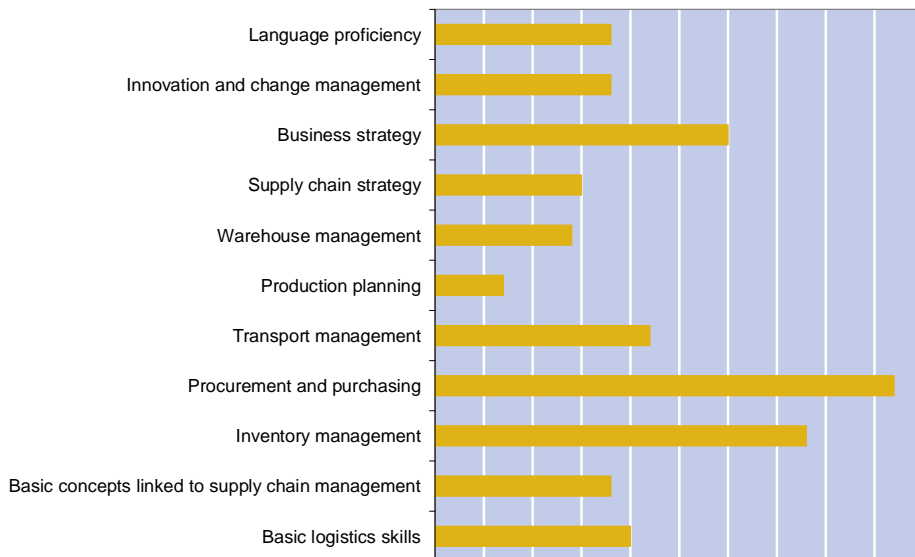


Figure 11 The development needs of personnel competence, trading companies

What is interesting to notice is that the option “transportation management” doesn’t seem to be a top priority in spite the fact that the companies see the development of transportation costs as harsh as they seem. One has to ask if this is a sign of giving up. Have the companies just accepted the rising transportation costs?

### 3.3 Outsourcing of logistics operations

According to the survey results, the current situation of outsourcing of different logistics functions is divided. There are some logistics functions that seem to be widely outsourced, such as transportation (both domestic and international), reverse logistics and freight forwarding. Almost 90% of companies have at least to some extent outsourced their transportation activities, whereas the percentage in reverse logistics and freight forwarding is around 60%.

On the other hand, there is a large variety of different logistics functions that are almost completely taken care of by the companies themselves.

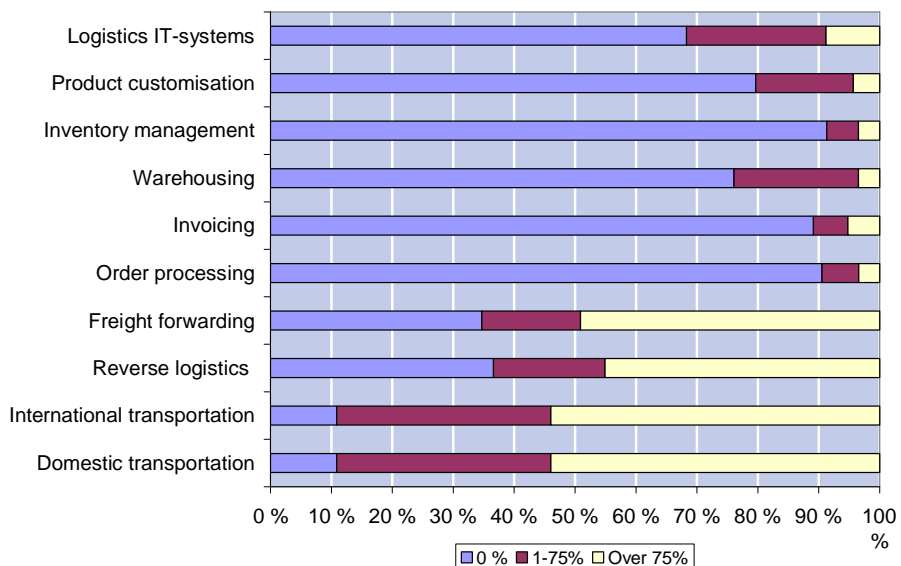


Figure 12 Outsourcing of different logistics functions, companies in South-western Finland

Far more interesting than the current situation of outsourcing is the future trend in different functions. The companies were also asked how

they see the situation of outsourcing of different logistics functions within the next five years.

It seems that logistics IT-systems and invoicing would be the logistics functions that will have the most significant growth in the nearest future. Other growing areas of outsourcing would be warehousing and inventory management.

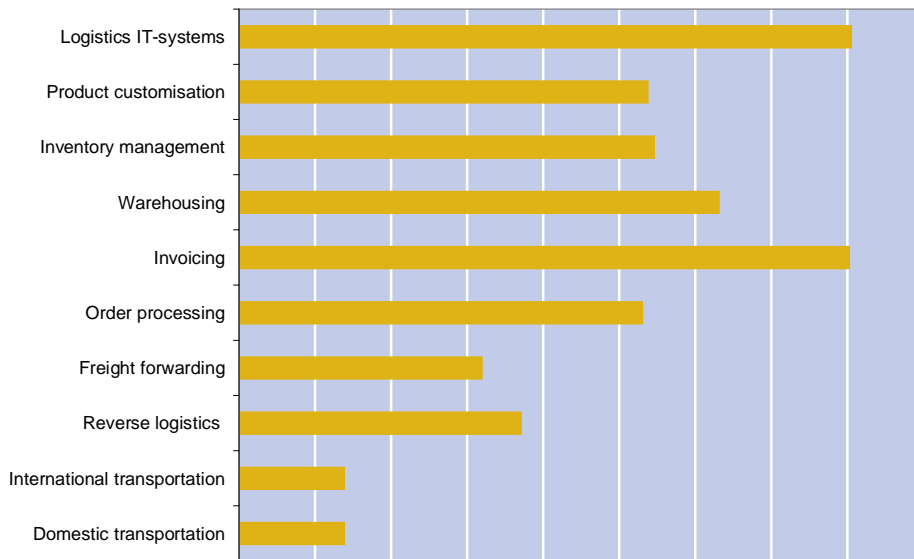


Figure 13 The relative trend of outsourcing, companies in South-western Finland

The future development of outsourcing is not just the trend that new functions will be outsourced in addition to the old ones. The other trend is the change in the way the different components of logistics process are outsourced. The current situation can be described so that the majority of outsourcing is outsourcing of individual logistics functions.

In chapter 4.1 the logistics providers' views on the development of logistics markets are discussed. The message is that the demand of services is shifting from individual services towards different kind of service packages offered by a single service provider.

### 3.4 Operating environment

Although competitiveness from the economics point of view is an important factor in decision making when the companies decide their location, the matter of good location goes far beyond that. For example

the infrastructure issues (roads and other connections), the availability and the location(s) of competitors are important issues when companies weight the pros and cons of different locations.

In this survey the companies were asked to evaluate the operating conditions in their location in respect to general business perspective, the availability of production and business facilities, logistics efficiency, transport infrastructure and in relation to location(s) of company's competitors. Figure 14 presents the views of manufacturing companies in southwestern Finland. As can be seen from the figure the majority of companies seem to be satisfied with their location, in most of the areas of business.

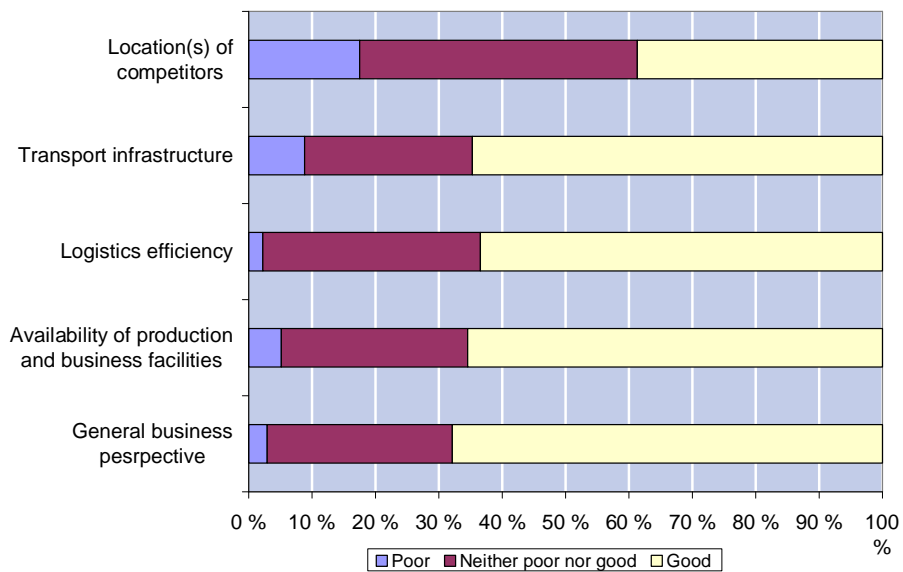


Figure 14 Manufacturing companies' opinions on their operating environment

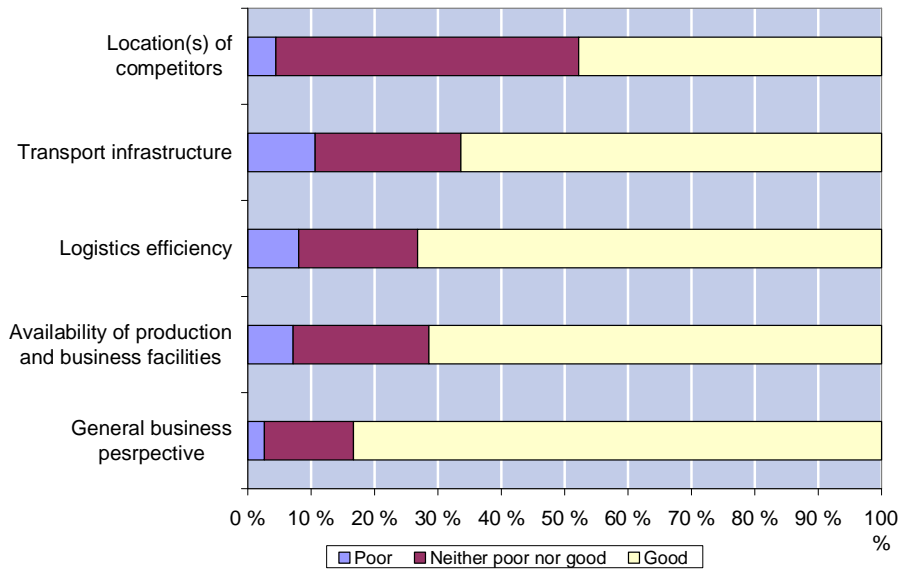


Figure 15 Trading companies' opinions on their operating environment

What is striking to notice is that the share of companies satisfied with their operating preconditions compared to location(s) of competitors is much lower than on the other areas. In fact, when compared nationally, South-West Finland ranks 13th on this question. Furthermore, when the companies are compared using their level of internationalization (domestic company, export company, international company), only 26% of international companies are satisfied with their operating preconditions when compared to locations of competitors. This raises several questions; is there something wrong in South-West Finland? If there is, can it be corrected so that the companies will see the area on a better light than they do at the moment?

Figure 16 presents the regional distribution of companies opinions on the operating preconditions compared to locations of competitors within South-West Finland. In the picture, the three sub-regions are presented separately.

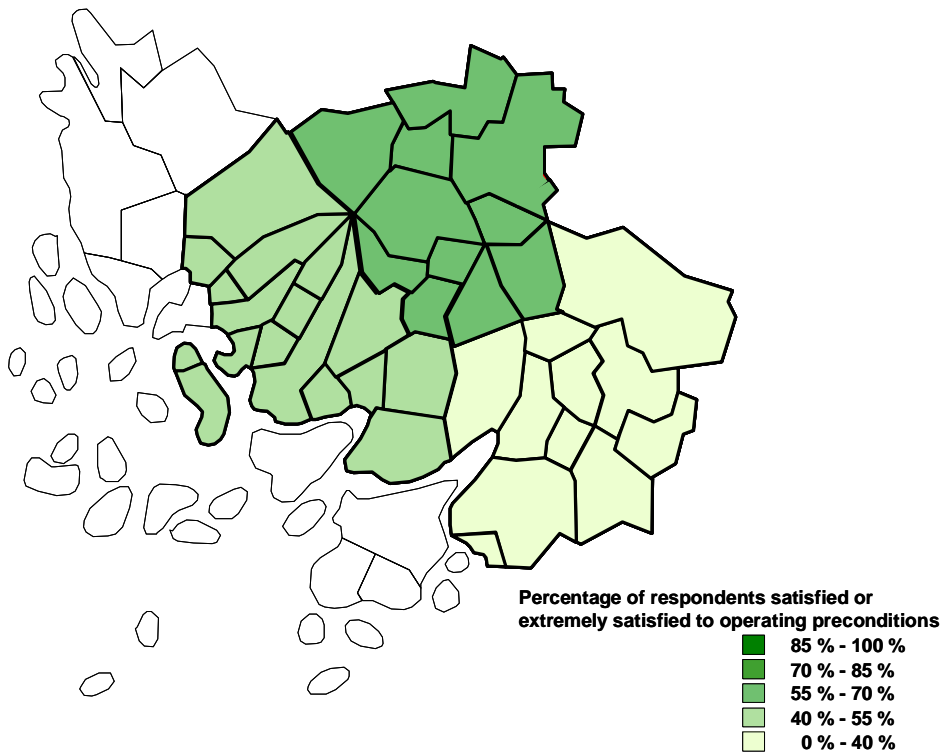


Figure 16 Companies' views on operating preconditions compared to locations of competitors, regional distribution in South-West Finland

It is interesting to notice that there are in fact differences within the region as well. Only some 30% of companies in the Salo sub-region seem to be satisfied with their location, whereas the share of satisfied or extremely satisfied companies is almost 60% in the Loimaa sub-region. In Turku region the share of satisfied companies is around 40%. These results raise questions to regional decision makers. Could the differences be explained by some natural reasons such as differences in industries the companies represent, or are there other causes affecting the results? Has Loimaa region really been more successful in creating good operating conditions for the companies than the other sub-regions?

The companies were also asked about their use of different information and communication techniques. The structure of this question was a bit different in the Finnish survey than it was in the LogOn Baltic survey. The biggest difference being that the usage of Bar codes was not asked from the Finnish companies. Figure 17

illustrates the usage of different ICT-systems of manufacturing and trading companies in South-West Finland.

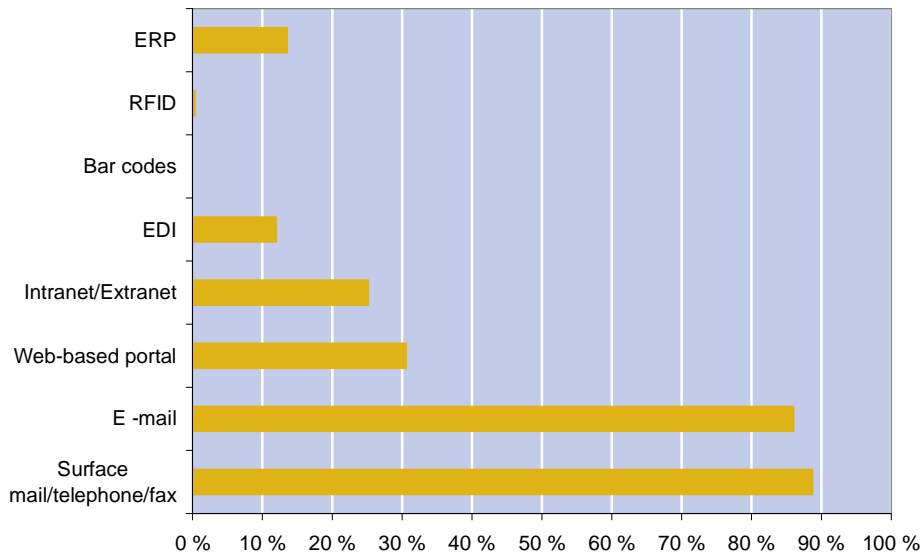


Figure 17 The usage of different ICT-systems, manufacturing and trading companies in South-western Finland

The distribution of companies into different size categories is clearly visible in the information and communication technologies the companies use. The majority (some 90 %) of respondents inform that they use the most common technologies like telephone, fax and e-mail. Like on the national level, the more advanced technologies are more commonly used by larger companies.

Some 25-30% of companies inform that they use technologies like web-based portals or Intranet/ extranet solutions in their business activities. EDI and ERP –systems are used by some 10% of respondents.

What is interesting is the low share of companies using RFID. The RFID –technology and the possibilities it creates to logistics has been a major subject of discussion in the nearest past. One would think that with all the discussion, also the use of RFID in some form would be more common. According to the results of this survey, the technology is still waiting for a major breakthrough. The companies were also asked how they see the future of RFID in the future, within next five years. Especially the larger and internationally operating companies expected the use of RFID to increase. Some 50% of respondents from



internationally operating companies expected their firm to be using RFID technology within the next five years.

### 3.5 Self assessment of the companies

The self assessment of companies was handled differently in the LogOn Baltic survey and the Finnish national survey that was performed earlier. In the LogOn Baltic survey the self assessment of companies was asked widely with as much as 5 individual groups of questions, whereas in the Finnish survey there were two sets of questions with a similar focus.

Because of the differences in the structure of the questionnaire, the self assessment of companies will be reported differently in this report.

The majority of respondents seem to agree to some extent with the statement that the companies monitor and evaluate logistics costs and performance internally in the company. There seems to be a big difference compared to the other statement concerning the monitoring of logistics performance with different interest groups outside the company. Only a small minority of respondents agree that their company is monitoring logistics together with suppliers or customers.

The companies were also asked about the transparency of their supply chain. According to the results only a very small minority of companies have access to their customers' inventory balances. The same trend is with the information sharing "backwards" in the supply chain. Only a small minority of companies have given their suppliers access to their own inventory balances.

These results are in a strong contrast with the development needs of the companies. Especially the large companies seem to acknowledge that transparency in the supply chain is the most important development need in the companies' logistics. Still, there doesn't seem to be any transparency, or even an effort to increase it.

Table 3 Companies' self assessment of transparency in the supply chain

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
We regularly monitor and evaluate our logistics costs and performance internally	22	46	42	82	55
We regularly monitor and evaluate our logistics costs and performance with selected suppliers and customers	64	67	69	35	10
We regularly monitor the environmental effects of our logistics operations	41	47	60	78	19
Our company has access to our customers' inventory balances	169	33	20	17	7
Our suppliers have access to our company's inventory balances	181	27	17	19	3

Another set of questions that was presented to the companies dealt with the future development of the supply chain.

Table 4 Companies' views on the future development of the supply chain

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Within five years time we will be using RFID	105	35	64	26	11
There will be growing need for round-the-clock operations	105	39	46	38	16
Different problems and disturbances will increase in our company's logistics	66	74	65	37	2
Our company is well prepared for problems and disturbances in logistics	24	61	93	53	11
Preparation for problems and disturbances will significantly hamper logistics	54	53	91	37	8

Surprisingly, the majority of companies don't see that there would be a growing need for round-the-clock operations in the companies' logistics. The other statements give a bit confusing results as well.

Most of the companies don't seem to agree with the statement that different problems and disturbances are increasing in the company's logistics. The same goes with the other questions that were asked. The vast majority of companies do not expect any kind of problems or disturbances to increase in their logistics or and they don't seem to think that preparation for disturbances would hamper the efficiency of their logistics operations.

Figure 18 illustrates the different development needs related to companies' logistics. As can be seen, the most important development needs of manufacturing and trading companies seem to be the logistics competence of companies' personnel. When analysing these results one has to remember that the majority of respondents are from small and medium-sized companies, even micro size companies. This result could be seen so that the smaller companies tend to have limited resources and possibilities to recruit and maintain experts of different functions. The only option for them is to try to cope with the existing personnel, possibly lacking competence of certain areas. Other more popular development needs would seem to be cutting logistics costs, developing information systems and improving customer service.

What is interesting to notice is the fact that increasing transparency in the supply chain is not seen as a priority. In the national survey, among the large companies increasing transparency in the supply chain was seen as the most important development need of all. One could conclude that the smaller companies face different, more "down to earth" –type of problems and development needs, whereas the larger companies have already solved the more common problems and are ready to recognize more complex needs.

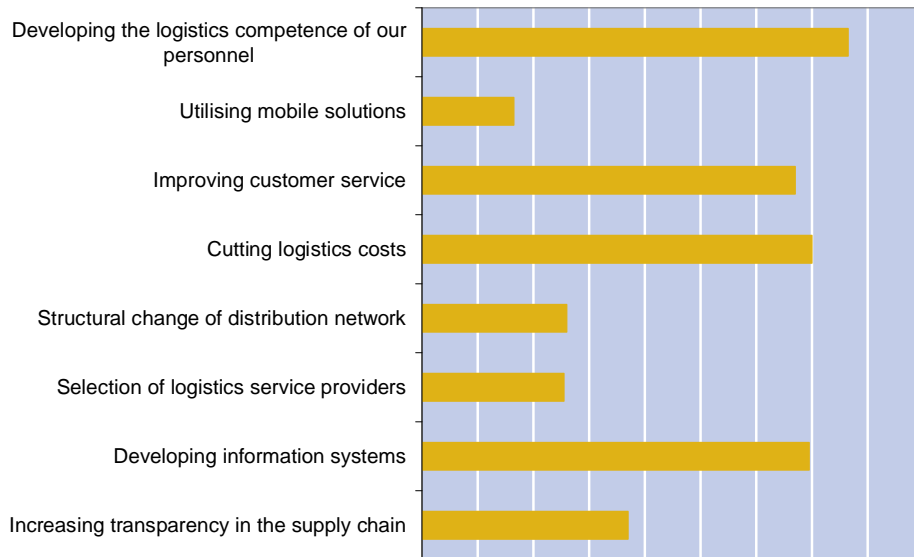


Figure 18 The most important future development needs of manufacturing companies

Another interesting point is that transparency has been on the top of the list in the previous surveys as well. Before the survey of 2006, The Finnish ministry of transport and communications has since 1992 done three national logistics surveys and in every single one of them, increasing transparency in the supply chain has been amongst the top priorities. In reality, there has not been any major progress in the concrete actions of the companies. Transparency and information sharing between different parts of the supply chain has been and still is very rare.

## 4 FINDINGS FROM LOGISTICS SERVICE PROVIDERS

### 4.1 Client structure and market development

Figure 19 describes the views of logistics service providers on the future development of outsourcing. As can be seen from the figure, the share of individually outsourced functions is predicted to diminish by the year 2010, whereas the share of standardised and customised service packages will grow.

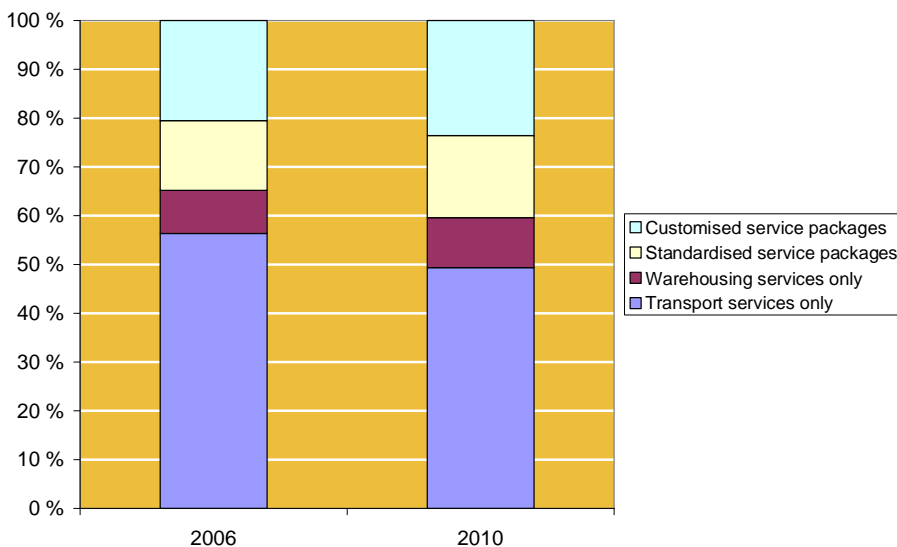


Figure 19 Distribution of turnover in logistic services companies for different types of services 2006 and 2010 (estimate)

The key finding is that instead of outsourcing single functions like transportation, the future of outsourcing will be on more and more complex service packages. This development will mean changes in the market structure of logistics service providers and bring challenges especially to the smaller service providers.

A small service provider has been able to provide and compete with a single service, but smaller companies will have difficulties matching the demand of more complex service packages.

Figure 20 presents the views of service providers about the future trends of outsourcing.

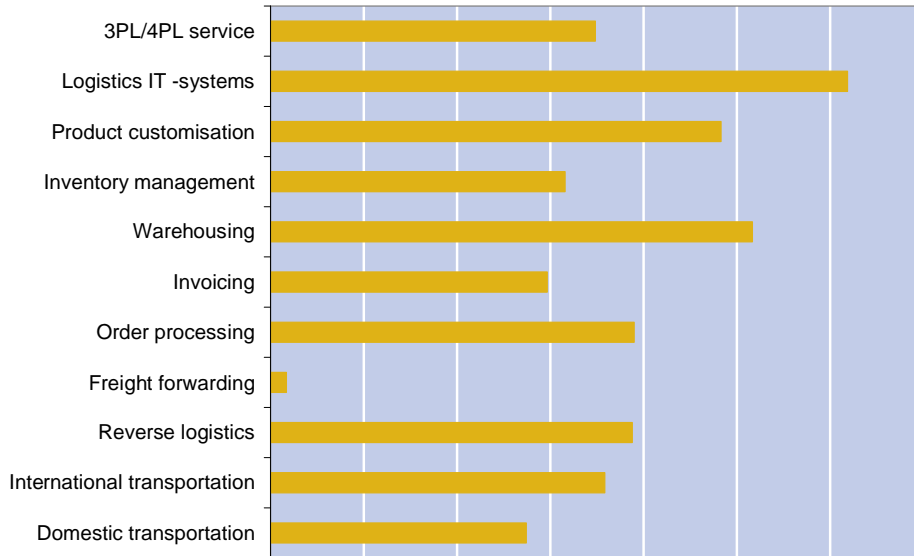


Figure 20 The relative trend of outsourcing, logistics service providers in South-western Finland

As can be seen, also the service providers' opinion is that the outsourcing of logistics IT-systems and warehousing will be growing fastest in the future. The third largest growth will on service providers' opinion be in the outsourcing of product customisation. These results together with the opinions of manufacturing and trading companies' opinions mean that there is some sort of understanding between the customers and providers of outsourced services. This of course can be taken as a good sign, since the service providers should on these bases be able to develop their operations into the right direction to match the demand.

## 4.2 Logistics competence

Logistics service providers were also asked to identify the most important development needs of their personnel competence in logistics. Figure 21 is a summary the most important competence

development needs of all three personnel classes; top management, middle management and operative staff.

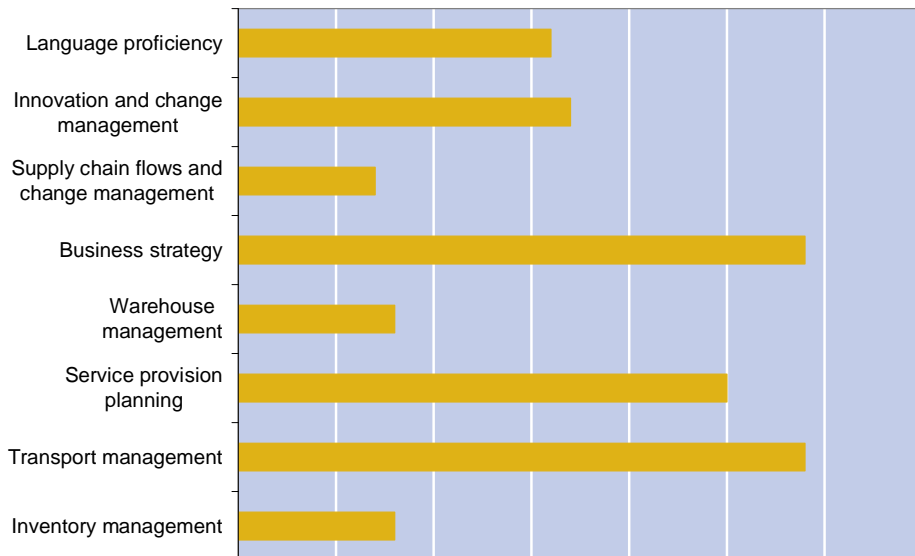


Figure 21 The most important development needs of personnel competence, logistics service providers

As logical, the different development needs were divided between the different groups. Overall it seems that Business strategy, Transportation management and service provision planning are the most important competence development needs. Within these three alternatives the answers were divided so that business strategy was the most important development need for senior management, whereas the most popular alternative for middle management was service provision planning and for the operative staff it was transport management.

### 4.3 Development needs and threats of the future

It seems that tightening competition and changes in the market are the most urgent issues in the business of logistics service providers. Logistics service providers were asked to name the three most serious threats to their business. In figure 22, the results are weighted so that the most urgent threat has received a weight of 3, the second threat a weight of 2 and the third a weight of 1.

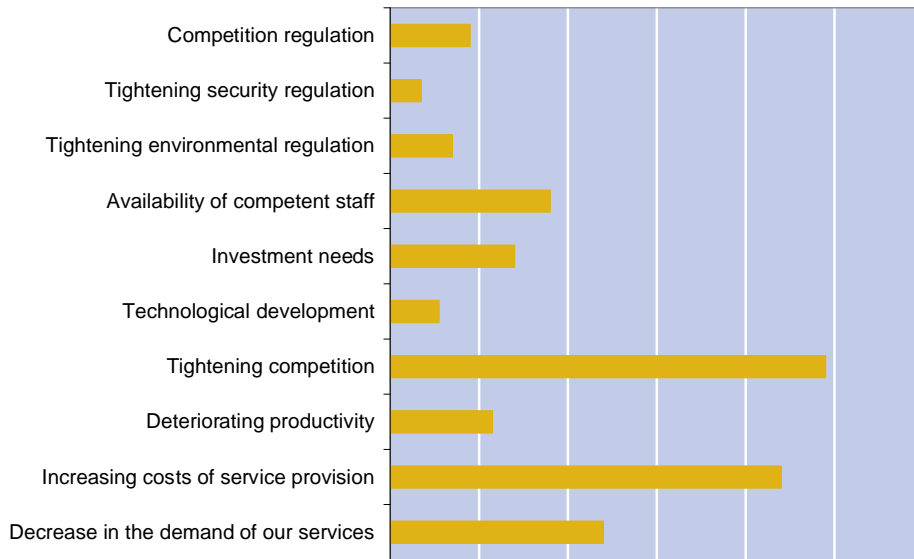


Figure 22 Largest threats to business, logistics service providers

As can be seen, the most urgent threat seems to be the tightening of competition. The second one is the fear of increasing costs in service provision. The third one seems to be the mirror image of tighter competition, the decrease in the demand of services the company offers. Referring to Figure 19 one can at least partly explain these results. The companies seem to recognize the tightening competition and at the same time the changes in the demand of different services. One could say that these threats arise from the development that the demand of logistics services is shifting from individual services to different service packages. Majority of respondents in this logistics survey are small companies that face real challenges in providing more complex products to their customers.

This trend can clearly be seen in the development needs of logistics service providers. Figure 23 presents the summary of companies' development needs in logistics operations.



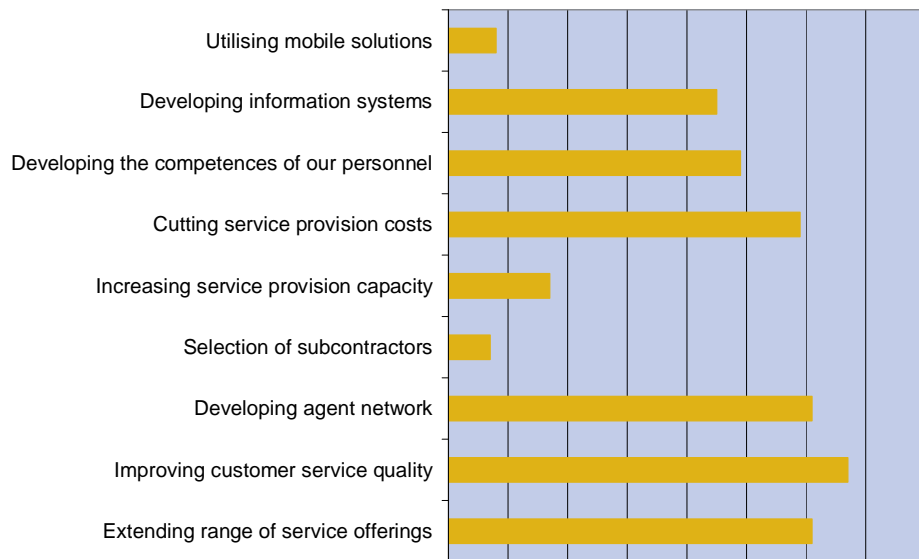


Figure 23 The most important development needs of the future, logistics service providers

Although the responses are divided between several options, the message is clearly visible. Among the three most popular development needs are; improvement of customer service quality, extending the range of service offerings and developing agent network. The fourth development need is to meet the challenge of cost efficiency.

One could conclude that the most important needs for development are related to the question, how the companies, especially the smaller ones will be able to match the growing needs and changing demands of their customers. Large companies will most likely be able to diversify to meet the demand, but smaller companies will have to seek new ways to act, and find new forms of partnership to keep in pace with the concentrating markets.

#### 4.4 Operating environment

Logistics providers' opinions on operating preconditions seem to be similar to the opinions of manufacturing and trading companies of the region. Figure 24 presents the views of service providers.

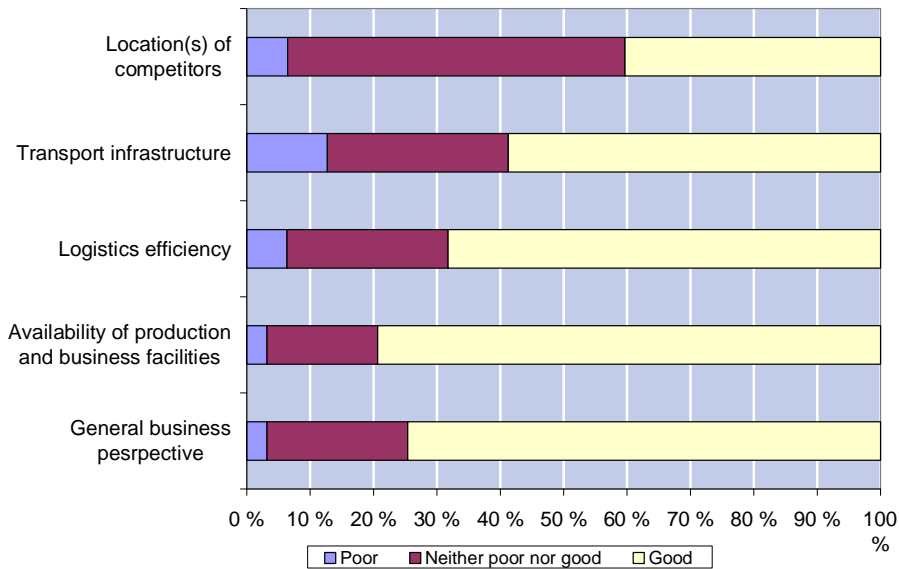


Figure 24 Logistics service providers' opinions on their operating environment

The majority (60-80 %) of companies seem to consider the operating conditions relatively good. Only exception to the trend is the operating conditions compared to the location(s) of competitors, as it was with the manufacturing and trading companies. Only 40% of logistics service providers consider this part of operating conditions to be good or very good.

The companies were also asked about their use of different information and communication techniques. The structure of this question was a bit different in the Finnish survey than it was in the LogOn Baltic survey. The biggest difference being that the usage of Bar codes was not asked from the Finnish companies. Figure 25 illustrates the usage of different ICT-systems of logistics service providers in South-West Finland.

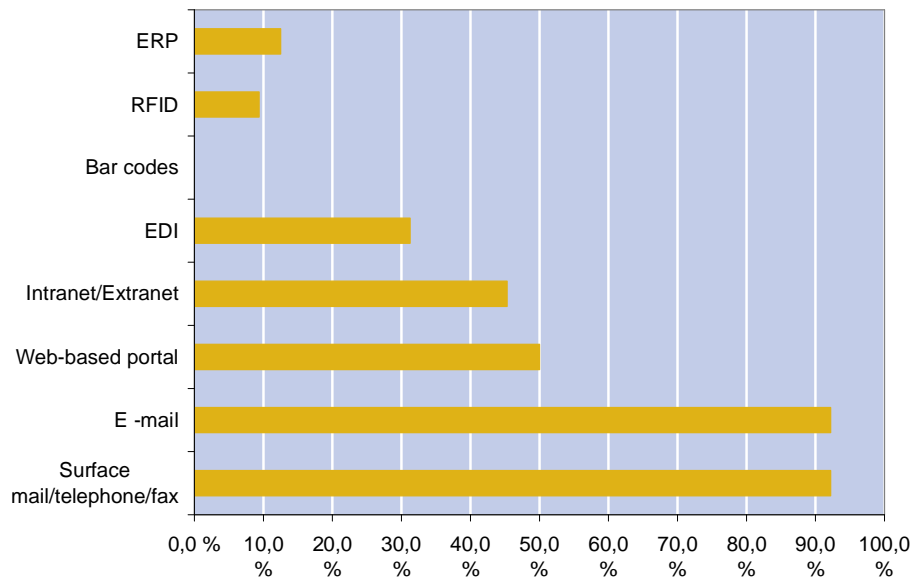


Figure 25 The usage of different ICT-systems, logistics service providers in South-western Finland

As can be seen, most of the companies use mail, telephone and e-mail in their communication. What is at least surprising is the large share, as much as some 50% of companies, using web-based portals or Intranet/Extranet solutions.

The use of EDI or ERP-systems is not as common, which can be explained with the fact that such systems are rather expensive for smaller companies to acquire and maintain and thus are not rational choices for the companies.

The use of RFID is still rare at the moment. More interesting, though is the future development in the use of different methods. Companies were also asked how they see the use of RFID within the next five year, and those results would indicate significant growth in the use of RFID.

#### 4.5 Self assessment of the companies

Like for the manufacturing and trading companies, the self assessment of logistics service providers was asked with a bit more narrow set of questions in the Finnish logistics survey as it was asked in the LogOn Baltic survey. Because of that, also the self assessment of logistics service providers in South West Finland will differ from the analysis in the other reports.

Table 5 Companies' self assessment on complexity of the supply chain

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
We regularly monitor the environmental effects of our logistics operations	0	5	2	36	20
The regulation of transport of dangerous goods has tightened	0	4	8	23	26
There will be growing need for round-the-clock operations	7	9	11	23	13
Different problems and disturbances will increase in our customers logistics	4	10	20	22	6

Unlike the manufacturing and trading companies, the majority (39 of 63 companies) of logistics service providers see that the need for round-the-clock operations will be growing in the future. Another difference from manufacturing and trading companies is that the share of companies that see the number of problems and disturbances in logistics is increasing.

It can be taken as logical that a majority of logistics service providers consider their company to be well prepared to the growing number of problems and disturbances, since they should be the experts in dealing with different type of problems and offering different kind of solutions.

The views on how the different disturbances will affect the efficiency of logistics operations seem to differ from each other almost as large amount of companies consider that there is no effect on the efficiency as the amount of companies that expect efficiency to be affected.

Table 6 Companies' self assessment on the future development of the supply chain

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Our company is well prepared for problems and disturbances in logistics	1	8	15	29	8
Preparation for problems and disturbances will significantly hamper logistics	6	15	15	16	10
It is important for our company to be a part of a Europe-wide network	16	10	11	10	15
Within five years time we will be using RFID	7	6	24	11	13

One question that was asked only from the service providers was the statement "it is important for our company to be a part of Europe-wide network." The share of companies that agreed with the statement and the share of companies that disagreed with the statement were almost equally as large.

Once again the size of the company is the explaining variable. The larger companies are more likely to operate on a wider geographic area, meeting also the international competition. Just like there is a need for smaller, domestically operating companies to find partners for co-operation in the local market, there is a need for larger companies to create connections in the European level.



## 5 SUMMARY AND CONCLUSIONS

Average logistics costs of manufacturing companies are between 14% (micro companies) and 9% of turnover. The level of costs is high, but not higher than the national cost level.

Logistics costs of trading companies are high, even higher than the national level. Part of the explanation can be that the respondents in South-West Finland seem to be concentrated on such industries that seem to have the highest costs in the national level as well.

The main result about the logistics costs is that the costs are expected to rise in the future. Especially the transportation costs that are already relatively high are expected to be on the rise.

At the moment, transportation and freight forwarding are the most commonly outsourced logistics functions. The other logistics functions that were asked from the respondents were not as common. The future trend of outsourcing will be on the logistics IT-systems, invoicing and functions related to material management, such as warehousing.

The most important development needs of manufacturing and trading companies seem to be related to the competence of company's personnel, logistics IT-systems and naturally, meeting the challenge of cost efficiency.

Overall the companies in South-West Finland seem to be satisfied with their operating conditions. There is one exception, though. Even on the national level, manufacturing and trading companies seem to consider their location compared to competitors as problematic. Only around 40% of respondents consider their location as good or very good. There are even differences between the different regions of South-West Finland. Only some 30% of companies in the Salo region seem to be satisfied with their location compared to competitors, whereas the same in Loimaa region is around 60%.

The most interesting findings about the logistics service providers is the emerging change in the demand of different services, and the change in the structure following it. The customers are demanding more complex service packages instead of individual services like transportation. This puts a challenge especially to the smaller service providers. Will they be able to meet the changing demand, and if so, what are the ways to adapt? Does it mean that the small service

providers will remain small and seek ways to meet the demand by cooperation with different service providers or does it mean that the market is centralising to only a few large service providers.



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# APPENDIX

## Appendix 1 Interview guideline

### [General Questions for all respondents]

#### **G1. Background information**

- a) Company name / Name of business unit: [Open field]
- b) Postal code: [Open field]
- c) Email address (required only if you wish to receive the customised survey report): [Open field]
- d) Respondent's position in the firm:

[Drop-down menu]

- Senior management
- Middle management
- Operational staff
- Expert
- Other

#### **G2. Please choose whether you wish to respond on behalf of the whole firm or a group of companies OR an individual business unit.**

Both options are hereon referred to as "your firm".

[Drop-down menu]

- I wish to respond on behalf of the whole firm or a group of companies.
- I wish to respond on behalf of an individual business unit.

#### **G3. Please indicate the number of employees in your firm at the end of 2005.**

[Drop-down menu]

- 1-9
- 10-49
- 50-249
- 250-499
- 500-999
- 1000-1999

2000-4999  
5000-10000  
Over 10000

**G4. Please indicate the turnover of your firm in 2005.**

[Drop-down menu]

0-2 M EUR  
2.1-5 M EUR  
5.1-10 M EUR  
10.1-25 M EUR  
25.1-50 M EUR  
50.1-100 M EUR  
100.1-500 M EUR  
500.1-1000 M EUR  
1.1-5 billion EUR  
over 5 billion EUR

**[NOTE: this is a general scale used by Eurostat for EU statistics; please, provide us the corresponding national scales that conform to this in your national currency for Sweden, Estonia, Latvia, Lithuania and Poland!]**

**G5. Please choose the main sector that your firm represents.**

[Drop-down menu]

Manufacturing and construction  
Trading  
Logistics services

**[General scales and terms that need to be translated]**

Will decrease significantly  
Will decrease somewhat  
Neither decrease nor increase  
Will decrease somewhat  
Will increase significantly

No response

Internally  
With customers

With suppliers

With logistics providers

Much worse

Somewhat worse

Neither worse nor better

Somewhat better

Much better

Strongly disagree

Disagree

Neither disagree nor agree

Agree

Strongly agree

Very poor

Poor

Neither poor nor good

Good

Very good

**[Questions for manufacturing firms]**

**M6. Please choose the industry that best fits your firm's field of business.**

[Drop-down menu]

Manufacturing of food products, beverages and tobacco

Manufacturing of textiles and textile products

Manufacturing of leather and leather products

Manufacturing of wood and wood products

Manufacturing of pulp, paper and paper products

Publishing and printing

Manufacturing of coke, refined petroleum products, and nuclear fuel

Manufacturing of chemicals, chemical products, and man-made fibres

Manufacturing of rubber and plastic products

Manufacturing of other non-metallic mineral products

Manufacturing of basic metals and fabricated metal products

Manufacturing of machinery and equipment

Manufacturing of electrical and optical equipment

Manufacturing of transport equipment  
 Other manufacturing  
 Construction

**M7. Please choose the option that best describes production in your firm.**

[Drop-down menu]

Products are made to stock (MTS).  
 Products are assembled to order (ATO).  
 Products are made to order (MTO).  
 Customer specific products are engineered to order (ETO – including project-driven businesses).  
 Our business focuses on selling the manufacturing capacity of other firms to customers (capacity selling, CS).

**M8. Please choose the option that best describes your firm's position in the production chain (see figure).**

[Drop-down menu OR tick box, where only one option can be chosen]

Provider of raw materials  
 Provider of semi-finished products  
 Manufacturer / assembler of final products

**M9. Please estimate how many percent of your firm's PRODUCTION CAPACITY was located in each of the following geographical areas in 2005.**

NOTE! The total should add up to 100%.

[Drop-down menus (0; 1-100% range under each in 5% intervals)]

- a) In the domestic market
- b) Outside the domestic market but within the EU (incl. Norway, Iceland and Switzerland)
- c) Outside the EU but within Europe
- d) In the rest of the world

**M10. Please estimate how many percent of your firm's SALES were generated in each of the following geographical areas in 2005.**

NOTE! The total should add up to 100%.

[Drop-down menus (0; 1-100% range under each in 5% intervals)]

- a) In the domestic market
- b) Outside the domestic market but within the EU (incl. Norway, Iceland and Switzerland)
- c) Outside the EU but within Europe
- d) In the rest of the world

**M11. Please estimate how many percent of your firm's PURCHASES originated from each of the following geographical areas in 2005.**

NOTE! The total should add up to 100%.

[Drop-down menus (0; 1-100% range under each in 5% intervals)]

- a) From the domestic market
- b) From outside the domestic market but from the EU (incl. Norway, Iceland and Switzerland)
- c) From outside the EU but from Europe
- d) From the rest of the world

**M12. Please estimate the following logistics costs of your firm expressed as percentages of firm turnover in 2005.** [Drop-down menus (0-40% range under each in 1% intervals)]

NOTE! The total should NOT add up to 100%.

*Direct logistics costs*

- a) Transportation and cargo handling (incl. transport packaging)
- b) Warehousing (cost of running own warehouse or buying the service)

*Indirect logistics costs*

- c) Inventory carrying cost (incl. cost of capital tied in inventory)
- d) Logistics administration (costs from functions indirectly related to logistics)

*Other direct and indirect logistics costs*

- e) All other logistics costs

**M13. Please estimate how the relative share of the following logistics costs will develop by 2010 in your firm compared to firm turnover.**

[5-point scale under each (Will decrease significantly... Will increase significantly) + "No response"]

*Direct logistics costs*

- f) Transportation and cargo handling (incl. transport packaging)
- g) Warehousing (cost of running own warehouse or buying the service)

*Indirect logistics costs*

- h) Inventory carrying cost (incl. cost of capital tied in inventory)
- i) Logistics administration (costs from functions indirectly related to logistics)

*Other direct and indirect logistics costs*

- j) All other logistics costs

**M14. Please estimate how many percent of the following logistics operations are and will be managed by an external service provider in your firm.**

[5-point scale under each (0%; 1-25%; 26-50%; 51-75%; Over 75%) + "No response"]

*M14.1. At the moment*

- a) Domestic transportation
- b) International transportation

- a) Reverse logistics
- b) Freight forwarding
- c) Order processing
- d) Invoicing
- e) Warehousing
- f) Inventory management
- g) Product customisation/finalisation
- h) Logistics IT systems

*M14.1. In year 2010*

- a) Domestic transportation
- b) International transportation
- c) Reverse logistics
- d) Freight forwarding
- e) Order processing
- f) Invoicing
- g) Warehousing
- h) Inventory management
- i) Product customisation/finalisation
- j) Logistics IT systems

**M15. Which of the following methods are used on a weekly basis in your firm for managing the order-delivery process?**

[Separate tick box under each]

- a) Surface mail / telephone / fax
- b) Email
- c) Web-based portal, e.g. Internet marketplace
- d) Intranet/Extranet
- e) Electronic Data Interchange (EDI)
- f) Bar Codes
- g) RFID (Radio Frequency Identification)
- h) Enterprise Resource Planning system (ERP)
- i) Other

**M16. Please estimate your firm's logistics performance in terms of the following key figures.**

[Open fields under each, which accept numbers only]

- a) How many % of your customer orders are delivered by the requested day and time in complete and perfect condition including all documentation (perfect order fulfilment %)?
- b) How many **days** is your average customer order fulfilment cycle time (i.e. average number of days required from customer order receipt to order delivery)?



- a) How many **days** of end-product inventory does your firm hold in stock on average?
- b) What is the average number of **days** of sales outstanding in your firm (i.e. average number of days between customer order delivery to receipt of customer payment)?
- c) What is the average number of **days** of payables outstanding in your firm (i.e. average number of days between supplier order receipt to order payment)?

**M17. Please assess the logistics performance of your firm relative to its major competitors.**

[5-point scale under each (Much worse...Much better) + "No response"]

- a) My firm has been able to reduce the time between order receipt and customer delivery to as close to zero as possible.
- b) My firm is able to meet the quoted or anticipated delivery dates and quantities on a consistent basis.
- c) My firm is able to respond to the needs and wants of key customers.
- d) My firm is able to notify customers in advance of delivery delays and product shortages.
- e) My firm is able to modify order size, volume or composition during logistics operations.
- f) My firm is able to accommodate delivery times for specific customers.

**M18. Please indicate the extent to which you agree or disagree with the following statements regarding *logistics performance evaluation* from the perspective of your firm.**

[5-point scale under each (Strongly disagree...Strongly agree) + "No response"]

- a) We regularly monitor and evaluate our logistics costs and performance internally.
- b) We regularly monitor and evaluate logistics costs and performance with selected suppliers and/or customers.
- c) We regularly benchmark logistics performance metrics against our competitors.
- d) Regular monitoring and evaluation of logistics benefits our firm.
- e) We regularly monitor the environmental effects of our logistics operations.

**M19. Please indicate the extent to which you agree or disagree with the following statements regarding the *importance of logistics* from the perspective of your firm.**

[5-point scale under each (Strongly disagree...Strongly agree) + "No response"]

- a) Logistics has a major impact on our profitability.
- b) Logistics has a major impact on our customer service level.
- c) Logistics is a key source of competitive advantage for our firm.
- d) Logistics is a top management priority in our firm.

**M20. Please indicate the extent to which you agree or disagree with the following statements regarding *internal collaboration in logistics operations* from the perspective of your firm.**

[5-point scale under each (Strongly disagree...Strongly agree) + "No response"]

- a) We effectively share operational information within our firm.

- a) We are well prepared for internal disturbances and irregularities in our operations.
- b) Our information systems provide operational managers with sufficient and timely information to manage logistics activities.
- c) Strategic planning and target setting is done in collaboration between functions/departments.

**M21. Please indicate the extent to which you agree or disagree with the following statements regarding external collaboration in logistics operations from the perspective of your firm.**

[5-point scale under each (Strongly disagree...Strongly agree) + “No response”]

- a) We effectively share operational information with selected suppliers and/or customers.
- b) We are well prepared for external disturbances and irregularities in our operations.
- c) Our information systems support the sharing of operational information with selected suppliers and/or customers.
- d) We effectively collaborate with selected suppliers and/or customers to facilitate operational planning and to improve forecasting.

**M22. Please choose the most important future development need of your firm in terms of logistics operations.**

[Drop-down menu]

- Increasing transparency in the supply chain
- Developing information systems
- Selection of logistics service providers
- Structural change of distribution network
- Cutting logistics costs
- Improving customer service
- Utilising mobile solutions
- Developing the logistics competence of our personnel

**M23. Please indicate the competence area of your personnel the development of which would most benefit your firm.**

[Drop-down menu]

- Basic logistics skills
- Basic concepts linked to supply chain management
- Inventory management
- Procurement and purchasing
- Transport management
- Production planning
- Warehouse management
- Supply chain strategy
- Business strategy

Innovation and change management

Language proficiency

**M24. Please rate the external operational conditions that your firm faces in its domestic location(s) in terms of...**

[5-point scale under each (Very poor...Very good) + "No response"]

- a) General business perspective
- b) Availability of production and business facilities
- c) Logistics efficiency
- d) Transport infrastructure
- e) Location(s) of our competitors

**[Questions for trading firms]**

**T6. Please choose the industry that best fits your firm's field of business.**

[Drop-down menu]

Retail: Food, beverages and tobacco

Retail: Other

Wholesale: Food, beverages and tobacco

Wholesale: Other

Agency

Sales of motor vehicles and motor vehicle parts

Sales of automotive fuel

**T7. Please estimate how many percent of your firm's SALES were generated in each of the following geographical areas in 2005.**

NOTE! The total should add up to 100%.

[Drop-down menus (0; 1-100% range under each in 5% intervals)]

- a) In the domestic market
- b) Outside the domestic market but within the EU (incl. Norway, Iceland and Switzerland)
- c) Outside the EU but within Europe
- d) In the rest of the world

**T8. Please estimate how many percent of your firm's PURCHASES originated from each of the following geographical areas in 2005.**

NOTE! The total should add up to 100%.

[Drop-down menus (0; 1-100% range under each in 5% intervals) OR open fields, which accept numbers only]

- a) From the domestic market
- b) From outside the domestic market but from the EU (incl. Norway, Iceland and Switzerland)
- c) From outside the EU but from Europe
- d) From the rest of the world

**T9. Please estimate the following logistics costs of your firm expressed as percentages of firm turnover in 2005.**

NOTE! The total should NOT add up to 100%.

[Drop-down menus (0-40% range under each in 1% intervals) OR open fields, which accept numbers only]

*Direct logistics costs*

- a) Transportation and cargo handling (incl. transport packaging)
- b) Warehousing (cost of running own warehouse or buying the service)

*Indirect logistics costs*

- c) Inventory carrying cost (incl. cost of capital tied in inventory)
- d) Logistics administration (costs from functions indirectly related to logistics)

*Other direct and indirect logistics costs*

- e) All other logistics costs

**T10. Please estimate how the relative share of the following logistics costs will change by 2010 in your firm compared to firm turnover.**

[5-point scale under each (Will decrease significantly...Will increase significantly) + "No response"]

*Direct logistics costs*

- a) Transportation and cargo handling (incl. transport packaging)
- b) Warehousing (cost of running own warehouse or buying the service)

*Indirect logistics costs*

- c) Inventory carrying cost (incl. cost of capital tied in inventory)
- d) Logistics administration (costs from functions indirectly related to logistics)

*Other direct and indirect logistics costs*

- e) All other logistics costs

**T11. Please estimate how many percent of the following logistics operations are and will be managed by an external service provider in your firm.**

[5-point scale under each (0%; 1-25%; 26-50%; 51-75%; Over 75%) + "No response"]

*T11.1. At the moment*

- a) Domestic transportation
- b) International transportation
- c) Reverse logistics
- d) Freight forwarding

- a) Order processing
- b) Invoicing
- c) Warehousing
- d) Inventory management
- e) Product customisation/finalisation
- f) Logistics IT systems

*T14.1. In year 2010*

- a) Domestic transportation
- b) International transportation
- c) Reverse logistics
- d) Freight forwarding
- e) Order processing
- f) Invoicing
- g) Warehousing
- h) Inventory management
- i) Product customisation/finalisation
- j) Logistics IT systems

**T12. Which of the following methods are used on a regular basis in your firm for managing the order-delivery process?**

[Separate tick box under each]

- a) Surface mail / telephone / fax
- b) Email
- c) Web-based portal, e.g. Internet marketplace
- d) Intranet/Extranet
- e) Electronic Data Interchange (EDI)
- f) Bar Codes
- g) RFID (Radio Frequency Identification)
- h) Enterprise Resource Planning system (ERP)
- i) Other

**T13. Please estimate your firm's logistics performance in terms of the following key figures.**

[Open fields under each, which accept numbers only]

- a) How many % of your customer orders are delivered by the requested day and time in complete and perfect condition including all documentation (perfect order fulfilment %)?
- b) How many **days** is your average customer order fulfilment cycle time (i.e. average number of days required from customer order receipt to order delivery)?
- c) How many **days** of end-product inventory does your firm hold in stock on average?

- a) What is the average number of **days** of sales outstanding in your firm (i.e. average number of days between customer order delivery to receipt of customer payment)?
- b) What is the average number of **days** of payables outstanding in your firm (i.e. average number of days between supplier order receipt to order payment)?

**T14. Please assess the logistics performance of your firm relative to its major competitors.**

[5-point scale under each (Much worse...Much better) + "No response"]

- a) My firm has been able to reduce the time between order receipt and customer delivery to as close to zero as possible.
- b) My firm is able to meet the quoted or anticipated delivery dates and quantities on a consistent basis.
- c) My firm is able to respond to the needs and wants of key customers.
- d) My firm is able to notify customers in advance of delivery delays or product shortages.
- e) My firm is able to modify order size, volume or composition during logistics operations.
- f) My firm is able to accommodate delivery times for specific customers.

**T15. Please indicate the extent to which you agree or disagree with the following statements regarding *logistics performance evaluation* from the perspective of your firm.**

[5-point scale under each (Strongly disagree...Strongly agree) + "No response"]

- a) We regularly monitor and evaluate our logistics costs and performance internally.
- b) We regularly monitor and evaluate logistics costs and performance with selected suppliers and/or customers.
- c) We regularly benchmark logistics performance metrics against our competitors.
- d) Regular monitoring and evaluation of logistics benefits our firm.
- e) We regularly monitor the environmental effects of our logistics operations.

**T16. Please indicate the extent to which you agree or disagree with the following statements regarding the *importance of logistics* from the perspective of your firm.**

[5-point scale under each (Strongly disagree...Strongly agree) + "No response"]

- a) Logistics has a major impact on our profitability.
- b) Logistics has a major impact on our customer service level.
- c) Logistics is a key source of competitive advantage for our firm.
- d) Logistics is a top management priority in our firm.

**T17. Please indicate the extent to which you agree or disagree with the following statements regarding *internal collaboration in logistics operations* from the perspective of your firm.**

[5-point scale under each (Strongly disagree...Strongly agree) + "No response"]

- a) We effectively share operational information within our firm.
- b) We are well prepared for internal disturbances and irregularities in our operations.

- a) Our information systems provide operational managers with sufficient and timely information to manage logistics activities.
- b) Strategic planning and target setting is done in collaboration between functions/departments.

**T18. Please indicate the extent to which you agree or disagree with the following statements regarding *external collaboration in logistics operations* from the perspective of your firm.**

[5-point scale under each (Strongly disagree...Strongly agree) + "No response"]

- a) We effectively share operational information with selected suppliers and/or customers.
- b) We are well prepared for external disturbances and irregularities in our operations.
- c) Our information systems support the sharing of operational information with selected suppliers and/or customers.
- d) We effectively collaborate with selected suppliers and/or customers to facilitate operational planning and to improve forecasting.

**T19. Please choose the most important future development need of your firm in terms of logistics operations.**

[Drop-down menu]

- Increasing transparency in the supply chain
- Developing information systems
- Selection of logistics service providers
- Structural change of distribution network
- Cutting logistics costs
- Improving customer service
- Utilising mobile solutions
- Developing the logistics competence of our personnel

**T20. Please indicate the competence area of your personnel the development of which would most benefit your firm.**

[Drop-down menu]

- Basic logistics skills
- Basic concepts linked to supply chain management
- Inventory management
- Procurement and purchasing
- Transport management
- Production planning
- Warehouse management
- Supply chain strategy
- Business strategy
- Innovation and change management

Language proficiency

**T21. Please rate the external operational conditions that your firm faces in its domestic location(s) in terms of...**

[5-point scale under each (Very poor...Very good) + "No response"]

- a) General business climate
- b) Availability of production and business facilities
- c) Logistics efficiency(availability of good quality logistics services)
- d) Transport infrastructure
- e) Location(s) of our competitors

**[Questions for logistics service providers]**

**L6. Please choose the industry that best fits your firm's field of business.**

[Drop-down menu]

- Road transport
- Rail transport
- Water transport
- Air transport
- Stevedoring and storage
- Supporting and auxiliary transport activities
- Postal activities
- Courier activities
- Management of logistics information and logistics information systems
- Other logistics services

**L7. Please choose the *main* type cargo that your firm typically handles.**

[Drop-down menu OR tick box, where only one option can be chosen]

- Solid bulk
- Liquid bulk
- Unit cargo
- General cargo
- Valuables
- Express cargo
- Other

**L8. Which part of the production chain does your firm *primarily* serve?**

[Drop-down menu OR tick box, where only one option can be chosen]



- Providers of raw materials
- Providers of semi-finished products
- Manufacturers / assemblers of final products
- First tier distributors (e.g. wholesalers)
- Second tier distributors (e.g. retailers)

**L9. Please estimate how many percent of your firm's turnover was generated in each of the following geographical areas in 2005.**

[Drop-down menus (0; 1-100% range under each in 5% intervals) OR open fields, which accept numbers only]

- a) In the domestic market
- b) Outside the domestic market but within the EU (incl. Norway, Iceland and Switzerland)
- c) Outside the EU but within Europe
- d) In the rest of the world

**L10. Please estimate how many percent of your firm's turnover was generated in 2005 from...**

[Drop-down menus (1-100% range under each in 5% intervals)]

- a) Sales to your largest customer?
- b) Sales to your 5 largest customers?

**L11. Please estimate how many percent of your firm's turnover was generated in 2005 from...**

[Drop-down menus (0; 1-100% range under each in 5% intervals)]

- a) Pure transportation services?
- b) Pure warehousing services?
- c) Standardised logistics service packages?
- d) Customised logistics service packages?

**L12. Please estimate how many percent of your firm's turnover will be generated in 2010 from...**

[Drop-down menus (0; 1-100% range under each in 5% intervals)]

- a) Pure transportation services?
- b) Pure warehousing services?
- c) Standardised logistics service packages?
- d) Customised logistics service packages?

**L13. Please estimate how the demand of the following logistics services will develop by 2010.**

[5-point scale under each (Will decrease significantly... Will increase significantly)]

- a) Domestic transportation
- b) International transportation
- c) Reverse logistics

- a) Freight forwarding
- b) Order processing
- c) Invoicing
- d) Warehousing
- e) Inventory management
- f) Product customisation/finalisation
- g) Logistics IT systems
- h) 3PL/4PL service [Third Party / Fourth Party Logistics service]

**L14. Which of the following methods are used on a regular basis in your firm for managing the customer service process?**

[Separate tick box under each]

- a) Surface mail / telephone / fax
- b) Email
- c) Web-based portal, e.g. Internet marketplace
- d) Intranet/Extranet
- e) Electronic Data Interchange (EDI)
- f) Bar Codes
- g) RFID (Radio Frequency Identification)
- h) Enterprise Resource Planning system (ERP)
- i) Other

**L15. Please assess the level overall logistics competence...**

[5-point scale under each (Very low ... Very high) + "No response"]

- a) Of your firm.
- b) Of your customers.
- c) Of your suppliers
- d) Of your competitors

**L16. Please assess the performance of your firm relative to its major competitors.**

[5-point scale under each (Much worse...Much better) + "No response"]

- a) My firm has been able to reduce the time between customer order receipt and service delivery to as close to zero as possible.
- b) My firm is able to meet the quoted or anticipated service delivery dates on a consistent basis.
- c) My firm is able to respond to the needs and wants key customers.
- d) My firm is able to notify customers in advance of service delivery delays or other complications.
- e) My firm is able to modify service composition during logistics operations.
- f) My firm is able to accommodate service delivery times for specific customers.

**L17. Please indicate the extent to which you agree or disagree with the following statements regarding *logistics performance evaluation* from the perspective of your firm.**

[5-point scale under each (Much worse...Much better) + "No response"]

- a) We regularly monitor and evaluate our logistics costs and performance internally.
- b) We regularly monitor and evaluate logistics costs and performance with selected subcontractors and/or customers.
- c) We regularly benchmark logistics performance metrics against our competitors.
- d) Regular monitoring and evaluation of logistics benefits our firm.
- e) We regularly monitor the environmental effects of our logistics operations.

**L18. Please indicate the extent to which you agree or disagree with the following statements regarding *internal collaboration* from the perspective of your firm.**

[5-point scale under each (Strongly disagree...Strongly agree) + "No response"]

- a) We effectively share operational information within our firm.
- b) We are well prepared for internal disturbances and irregularities in our operations.
- c) Our information systems provide operational managers with sufficient and timely information to manage logistics activities.
- d) Strategic planning and target setting is done in collaboration between functions/departments.

**L19. Please indicate the extent to which you agree or disagree with the following statements regarding *external collaboration* from the perspective of your firm.**

[5-point scale under each (Strongly disagree...Strongly agree) + "No response"]

- a) We effectively share operational information with selected subcontractors and/or customers.
- b) We are well prepared for external disturbances and irregularities in our operations.
- c) Our information systems support the sharing of operational information with selected subcontractors and/or customers.
- d) We effectively collaborate with selected subcontractors and/or customers to facilitate operational planning and to improve forecasting.

**L20. Please indicate the most important future development need of your firm.**

[Drop-down menu]

- Extending range of service offerings
- Improving customer service quality
- Developing agent network
- Selection of subcontractors
- Increasing service provision capacity
- Cutting service provision costs
- Developing the competences of our personnel
- Developing information systems

Utilising mobile solutions

**L21. Please indicate the competence area of your personnel the development of which would most benefit your firm.**

[Drop-down menu]

- Inventory management
- Transport management
- Service provision planning
- Warehouse management
- Business strategy
- Supply chain flows and networks
- Innovation and change management
- Language proficiency

**L22. Which of the following do you consider to be the most serious threat to your firm?**

[Drop-down menu]

- Decrease in the demand of our services
- Increasing costs of service provision
- Deteriorating productivity
- Tightening competition
- Technological development
- Investment needs
- Availability of competent staff
- Tightening environmental regulation
- Tightening security regulation
- Competition regulation

**L23. Please rate the external operational conditions that your firm faces in its domestic location(s) in terms of...**

[5-point scale under each (Very poor...Very good) + "No response"]

- a) General business perspective
- b) Availability of production and business facilities
- c) Logistics efficiency
- d) Transport infrastructure
- e) Location(s) of our competitors

**LogOn Baltic Publications** (as of 21.9.2007)**LogOn Baltic Master reports**

- 1:2007 Developing Regions through Spatial Planning and Logistics & ICT competence - Final report  
Wolfgang Kersten, Mareike Böger, Meike Schröder and Carolin Singer
- 2:2007 Analytical Framework for the LogOn Baltic Project  
Eric Kron, Gunnar Prause and Anatoli Beifert
- 3:2007 Aggregated logistics survey report (*working title*)  
Håkan Aronsson and Naveen Kumar
- 4:2007 Aggregated ICT survey report (*working title*)  
Eric Kron and Gunnar Prause
- 5:2007 Aggregated Expert interview report (*working title*)  
Matti Takalokastari

**LogOn Baltic Regional reports****Development Measure Impact Analysis (DEMIA)**

- 10:2007 REGIONAL DEVELOPMENT IN THE SOUTHERN METROPOLITAN REGION OF HAMBURG, GERMANY - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT  
Janina Benecke, Jürgen Glaser and Rupert Seuthe
- 11:2007 REGIONAL DEVELOPMENT IN MECKLENBURG-VORPOMMERN, GERMANY - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT  
Gertraud Klinkenberg
- 12:2007 REGIONAL DEVELOPMENT IN ESTONIA - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT  
Jaak Kliimask
- 13:2007 REGIONAL DEVELOPMENT IN SOUTHWEST FINLAND - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT  
Kaisa Alapartanen
- 14:2007 REGIONAL DEVELOPMENT IN LATVIA - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT  
Riga City Council - Rode & Weiland Ltd.
- 15:2007 REGIONAL DEVELOPMENT IN LITHUANIA - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT  
NN
- 16:2007 REGIONAL DEVELOPMENT IN POMERANIA, POLAND (THE POMORSKIE VOIVODESHIP) - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT  
Anna Trzuskawska
- 17:2007 REGIONAL DEVELOPMENT IN SAINT PETERSBURG, RUSSIA - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT  
Mikhail Pimonenko
- 18:2007 REGIONAL DEVELOPMENT IN ÖSTERGÖTLAND, SWEDEN - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT  
Håkan Aronsson and Staffan Eklind

**ICT surveys**

- 20:2007 ICT SURVEY IN THE SOUTHERN METROPOLITAN REGION OF HAMBURG, GERMANY  
Wolfgang Kersten, Meike Schröder, Mareike Böger, Carolin Singer and Tomi Solakivi
- 21:2007 ICT SURVEY IN MECKLENBURG-VORPOMMERN, GERMANY  
Eric Kron, Gunnar Prause and Tomi Solakivi
- 22:2007 ICT SURVEY IN ESTONIA  
Seren Eilmann and Tomi Solakivi
- 23:2007 ICT SURVEY IN LATVIA  
Riga City Council, Telematics and Logistics Institute Ltd. and Tomi Solakivi

- 24:2007 ICT SURVEY IN LITHUANIA  
NN and Tomi Solakivi
- 25:2007 ICT SURVEY IN SOUTHWEST FINLAND  
Juha Lääkkö and Tomi Solakivi
- 26:2007 ICT SURVEY IN POLAND  
Anna Trzuskawska and Tomi Solakivi
- 27:2007 ICT SURVEY IN SAINT PETERSBURG, RUSSIA  
Yuri Ardatov and Tomi Solakivi
- 28:2007 ICT SURVEY IN ÖSTERGOTLAND, SWEDEN  
Naveen Kumar, Håkan Aronsson and Tomi Solakivi

### **Logistics surveys**

- 30:2007 LOGISTICS SURVEY IN THE SOUTHERN METROPOLITAN REGION OF HAMBURG, GERMANY  
Wolfgang Kersten, Mareike Böger, Meike Schröder, Carolin Singer and Tomi Solakivi
- 31:2007 LOGISTICS SURVEY IN MECKLENBURG-VORPOMMERN, GERMANY  
Eric Kron, Gunnar Prause and Tomi Solakivi
- 32:2007 LOGISTICS SURVEY IN ESTONIA  
Ain Kiisler and Tomi Solakivi
- 33:2007 LOGISTICS SURVEY IN LATVIA  
Riga City Council, Telematics and Logistics Institute Ltd. and Tomi Solakivi
- 34:2007 LOGISTICS SURVEY IN LITHUANIA  
NN and Tomi Solakivi
- 35:2007 LOGISTICS SURVEY IN SOUTHWEST FINLAND  
Tomi Solakivi
- 36:2007 LOGISTICS SURVEY IN POLAND  
Anna Trzuskawska and Tomi Solakivi
- 37:2007 LOGISTICS SURVEY IN SAINT PETERSBURG, RUSSIA  
Valeri Lukinsky, Natalia Pletneva and Tomi Solakivi
- 38:2007 LOGISTICS SURVEY IN ÖSTERGÖTLAND, SWEDEN  
Håkan Aronsson, Naveen Kumar and Tomi Solakivi

### **Expert interviews**

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