LogOn Baltic Regional reports
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LogOnBaltic

LOGISTICS SURVEY IN LATVIA

Riga City Council,
Telematics and Logistics
Institute Ltd. and
Tomi Solakivi

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(European Regional Development Fund) within
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EXECUTIVE SUMMARY

Collected factual statistical data about manufacturing, trading enterprises and business of logistic services in Latvia has been analysed. The sample of enterprises by size (micro, small, medium, large) quite representatively reflects the structure of Latvian economy in mentioned areas. The analysis that has been carried out, allows having opinion about the actual state of the logistic services market in Latvia and the tendencies of its development for the next 5 years. There are certain differences in the approach of manufacturing and trading enterprises to logistic services. The common index for both business categories is the necessity of enterprise personnel education in the sphere of basic logistic skills.

The data shows that enterprises of all three kinds (manufacture, trade and logistic services) usually evaluate the situation on the market accurately, understand that it is necessary to position themselves in supply chain correctly, ensure the transparency of mutual relations with chain partners and, certainly, pay special attention to improving the quality and assortment of services for customers. Latvian businessmen develop outsourcing, as well as the enterprise internal logistics, analysing the choice preferences on the individual basis.

The data of the survey shows that there are perspectives for development of the logistic services and information technologies on the Latvian market, especially in the sphere of Web-based portal, Intranet/Extranet, Electronic Data Interchange (EDI), bar codes, Radio Frequency Identification (RFID).

In connection with the absence of series of data the statistically proved decision about logistic indicators in Latvia could not have been made.

It is indirectly felt in the survey that Latvia is one of European Union border countries and that customs matters are important for guaranteeing the efficiency of Latvian logistic business.

KOPSAVILKUMS

Veikta Loģistikas aptaujas rezultātu analīze par Latvijas ražošanas, tirdzniecības un loģistikas pakalpojumu uzņēmumiem, kas aptaujas ietvaros tika klasificēti pēc to lieluma (mikro, mazie, vidējie, lielie), tādējādi pietiekami detalizēti atspoguļojot Latvijas ekonomikas struktūru šajās sfērās. Analīze atspoguļo datus par Latvijas loģistikas pakalpojumu tirgus reālo stāvokli un tā attīstības tendencēm tuvākajos 5 gados, vienlaicīgi analīzes rezultātā atklājusies dažādās rūpniecības un tirdzniecības uzņēmumu attieksme pret loģistikas pakalpojumiem. Savukārt, jāatzīmē, ka abu šo kategoriju uzņēmumiem iezīmējas kopīga tendence – nepieciešamība pēc uzņēmumu personāla prasmju papildināšanas un apmācības loģistikas jomā.

Iegūtie dati liecina, ka visu triju kategoriju (ražošana, tirdzniecība un loģistikas serviss) uzņēmumi kopumā pareizi novērtē izveidojušos tirgus situāciju, saprot, ka nepieciešams pareizi sevi pozicionēt piegāžu ķēdē, nodrošināt „caurspīdīgumu" attiecībās ar partneriem šajā ķēdē un, protams, pievērst īpašu uzmanību klientiem sniedzamo pakalpojumu kvalitātes un asortimenta uzlabošanai. Latvijas uzņēmēji attīsta kā uzņēmumu iekšējo loģistiku, tā arī pakalpojumu piesaisti no ārpuses, analizējot, kura izvēle individuālajā situācija ir visefektīvākais risinājums.

Aptaujas rezultāti parāda, ka pastāv reālas perspektīvas Latvijas loģistikas tirgus attīstībai, īpaši Web-based portal, Intrane/Extranet, EDI, bar codes, RFID jomā.

Sakarā ar vairāku datu iztrūkumu mums neizdevās pieņemt statistiski pamatotu lēmumu par loģistikas indikatoriem Latvijā.

Analīzes rezultāti netieši norāda, ka Latvija ir viena no ES robežvalstīm, un ka tieši ar muitas procedūrām saistītajiem jautājumiem ir svarīga loma Latvijas loģistikas biznesa efektivitātes nodrošināšanā.

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1 INTRODUCTION

1.1 Project introduction – LogOn Baltic

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.

1.2 Regional partner introduction

In Latvia the leading regional partner is the Riga City Council. The project is implemented also in cooperation with the Logistics and Customs Brokers Association and the Transport and Telecommunication Institute.

Riga City Council is the local government of Riga, Latvia's capital and its most significant economic centre. RCC has been a lead partner or a partner in a number of Interreg and Phare CBC projects, as well as other EC initiatives. Riga City Council has accrued a grounded expertise in EU project management and coordination; it includes projects like Riga Northern Transport Corridor (Northern Corridor), which is the largest transportation infrastructure project in Riga over the last decades. The goal of the project is to create a new transit highway through the city in the west-east direction bypassing the historical centre of the city. It will include Riga Port into the Trans-European Transport Network and will improve the competitiveness of Latvian East-West transport corridor.

Logistics and Customs Brokers Association[1] was established in 1997, with the initial aim of promoting the trade of customs brokers in Latvia through the development of the appropriate legislative base. When the new institution of “customs brokers” was established, the association refocused to develop other elements of business logistics besides customs issues. It acts as a cooperation platform for all interested parties regarding business logistics and customs clearance, as well as aims to promote the development of qualification and education standards in the field.

The work of the Transport and Telecommunications Institute[2] (TTI) is aimed at making productive contributions to the continued progress of the transportation industry of Latvia, in particular through conducting applied research and development work in contemporary and future transportation issues. The Institute encourages collaborative work between practitioners from both private and public sectors and the academics in various facets of transportation research relevant to the needs of Latvia. TTI also has a long experience in transport and logistics teaching.

1.3 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.

[1] Description of the partner is based on the information from www.lmba.lv.
[2] Description of the partner is based on the information from www.tsi.lv and www.logonbaltic.info.

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 avail-able at the project homepage www.logonbaltic.info.

2 SURVEY DESIGN

2.1 Target group and sample

According to the purposes of researches, the attention was mostly drawn to medium and small businesses, and this fact is confirmed with their shares in the sample: small companies (including micro) - ~84%, medium size companies - ~13% and their sum - ~ 97% total. This fact also reflects the general economic situation in Latvia. As stated by the Lursoft company (http://www.lursoft.lv/?a=16&v=en) at the end of the year 2006 in the Latvian National Enterprise Register there were near 210 thousands registered companies. Near 50 thousands of registered companies are active (really working, unsleeping) companies.

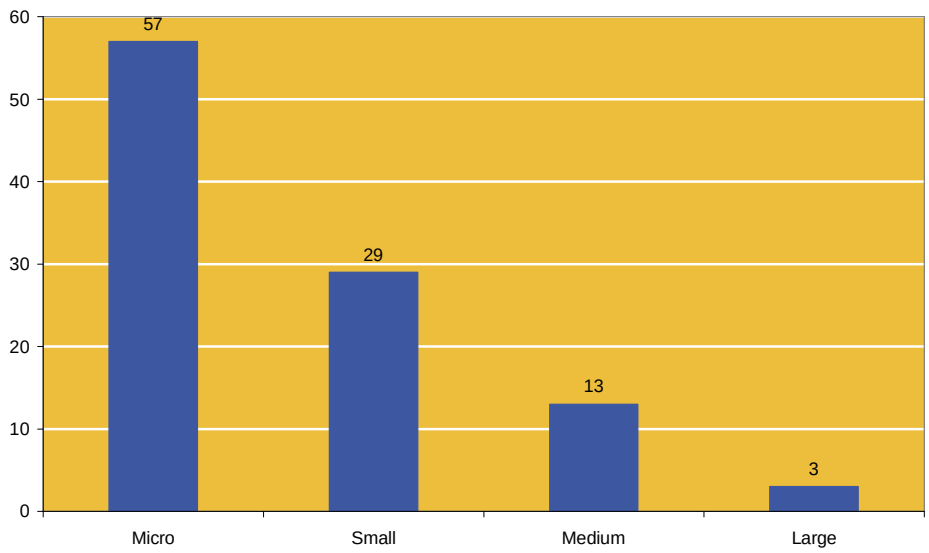

Figure 1 Number of respondents according to company size

The micro, small and medium size companies are near 99% of the mentioned above active companies. The Latvian SMEs do more than 65% of gross domestic product (GDP) and have about 75% of all the

employed persons. The number of Latvian companies per a thousand of Latvian inhabitants is about 20 and it is near two times less than the same average number in European Union.

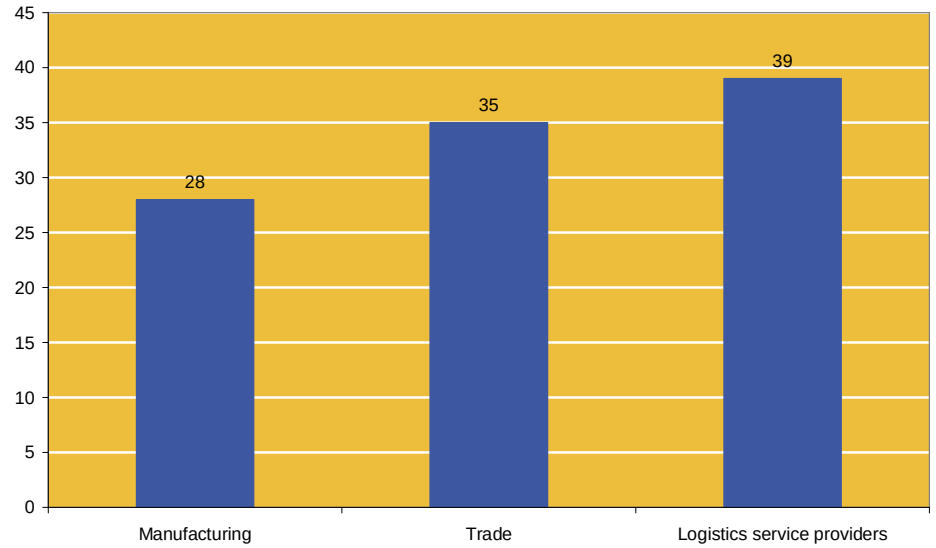

Figure 2 Number of respondents according to main industry

Businesses in the sample are also classified by their main activities according to the targets of researches: ~38% are logistic providers, ~34% – trade companies and ~28% - manufacture companies. This time this way of enterprises distribution is typical for Latvia to some extent, because during the last years the logo and slogan of Latvian business and government circles and the one of main Latvian economical directions is “Latvia is the country of transit and the West – East (gateway) bridge”. This kind of company distribution can be supported indirectly by statistical data from the 2006 Statistical Yearbook of Latvia. The year 2005 gross domestic product indices of Manufacturing, Trade and Transport are 106.3%, 117.4%, 116.2% accordingly (see table N2-6, p.19). It is required to take into account that in the mentioned above official Latvian source the data are given in accordance with the EU used Statistical Classification of Economic Activities (NACE Rev. 1.1). As the Head of Economic Board of Riga City Council, Mr I. Graurs said on TransBaltica 2007 (June15, 2007) conference the 2006 year distribution of economic segments in Riga is following: trade – nearly 21%, transport and logistics – nearly 19% and manufacture – nearly 18%. It is additional support of right data structure of the survey.

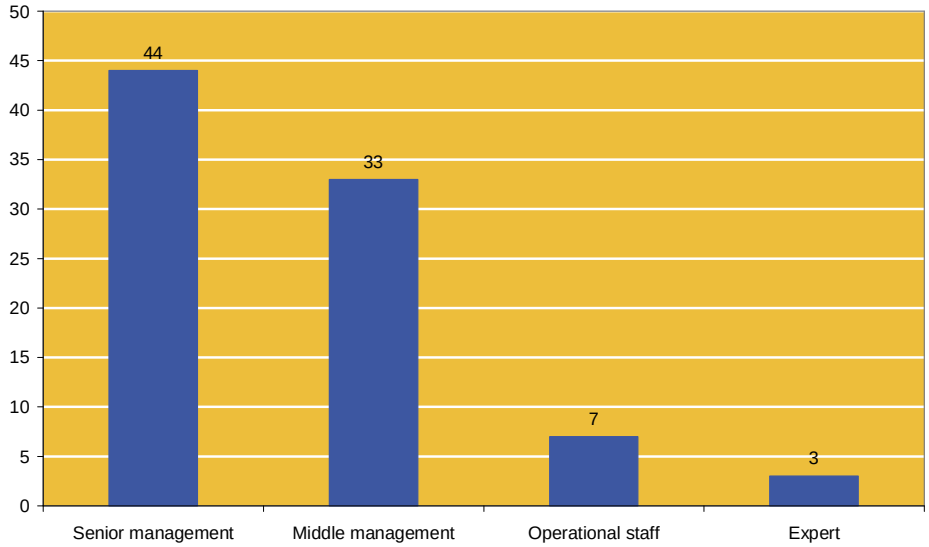

Figure 3 Number of respondents according to respondent's position in the company

The survey was carried out among various categories of personnel, but the majority of people interrogated consist of senior management (51%), middle management (38%), experts (3%) and operational personnel (8%). The coverage of various categories of personnel makes it evident that:

a. the structure of the survey is built correctly;
b. the answers were given by the company's most experienced staff;
c. usually micro companies staff is in average younger than the personnel of middle and large companies, so indirectly can be assumed the survey data includes answers of staff of different age. It is also valuable and reflects opinion of new generation managers.

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)

	1997		2000		2002	
Region	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). 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 %
Irland	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.

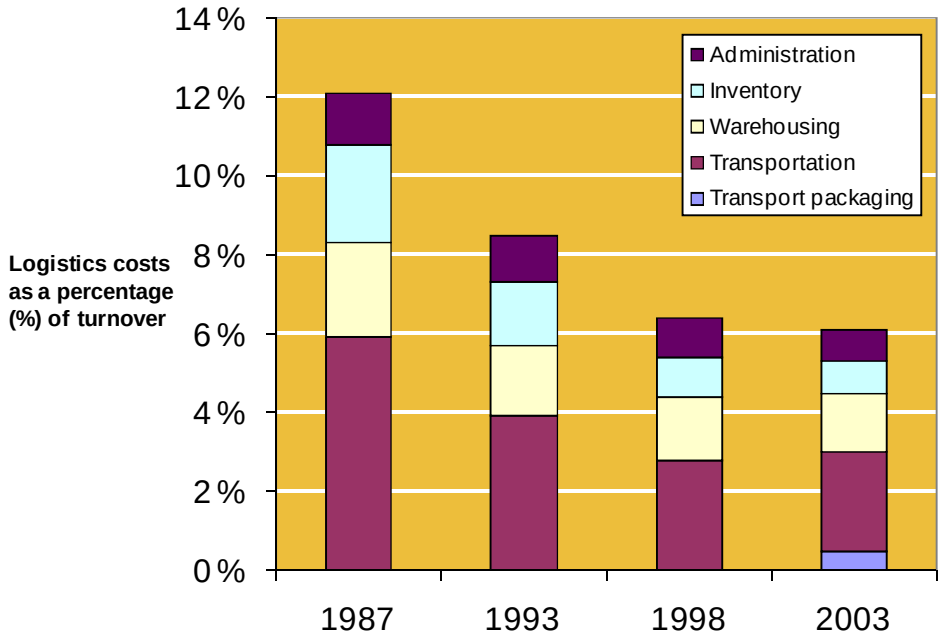

Figure 4 Logistics costs as a percentage of companies' turnover in the ELA/A.T. Kearney survey in 1987, 1993, 1998 and 2003 (European Logistics Association and A.T. Kearney, 2004)

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).

3 FINDINGS FROM MANUFACTURING AND TRADE

3.1 Logistics costs

3.1.1 Logistics costs Manufacturing

Manufacturing companies that have incoming and outgoing material flows believe that the price of transport and warehouse services will increase (more than 80% of respondents' answers). Other logistic services will become more expensive as well – more than 50% of people interrogated agree with that.

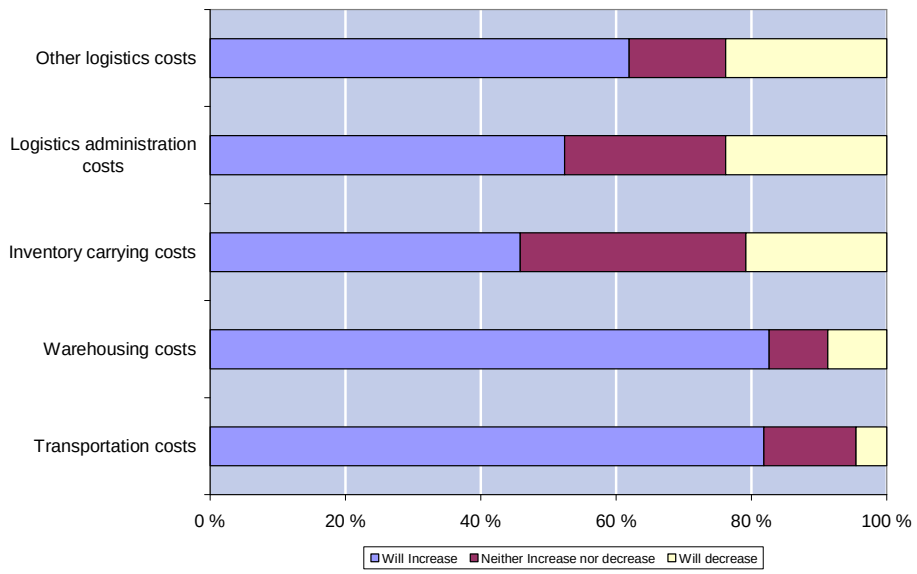

Figure 5 Estimate of the development of logistics costs, manufacturing companies

Only the category of expenses, which is connected with stock, in 50:50 percentage means both insignificant growth and insignificant reduction of stock expenses. This reflects the global tendencies that are connected with the use of Just-In-Time - technology, improvement of planning and respective reduction of stock.

First of all these conclusions of Latvian respondents based on the real fact of constant world oil price growth during the last ten years. In Latvia, for example (http://www.nra.lv/index.php?rid=52283), during last eight years petrol price increase is about 100%, exactly 97%. The last year increased prices of all energy resources (petrol, gas, electric energy). The survey answers reflect this situation.

3.1.2 Logistics costs Trade

There is a high level of agreement among the trading businesses. More than 50% of respondents suppose that all types of logistic expenses will rise, and more than 90% of companies think that transport costs will grow. Unlike manufacturing companies, trading companies consider that stock expenses will also grow, which can be explained by the specific character of this sphere.

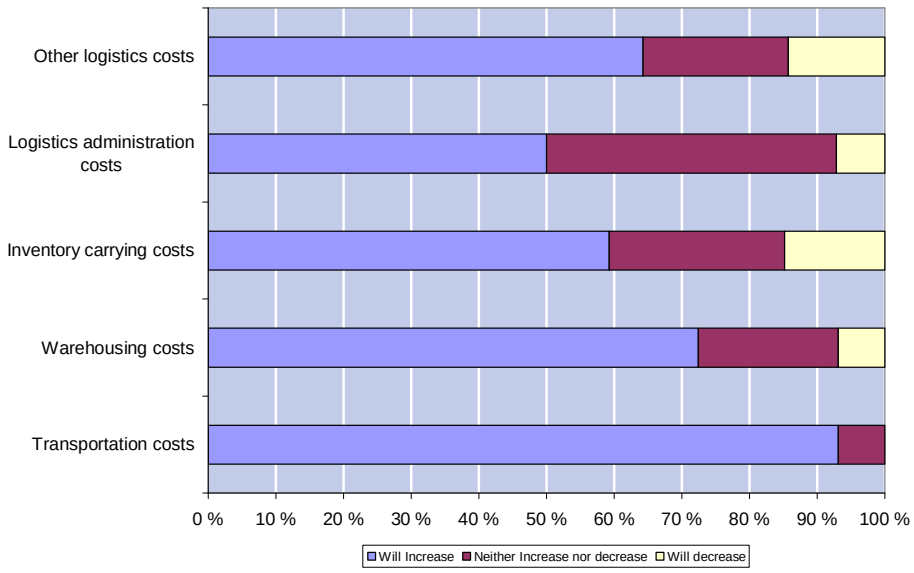

Figure 6 The estimate of the development of logistics costs, trading companies

The explanation of the costs increase trend opinion of Latvian trade companies is the same as for Latvian manufacturing companies. The inventory cost growth can be also explained as result of competition (fighting for clients) between small trade, supermarkets and electronic trade (E-commerce).

3.2 Logistics competence

90% of respondents mark the necessity of the improvement of transport management. 60% indicate the necessity of basic logistic education development. 30% consider that the basic knowledge of supply chains is necessary. 20% mark the necessity of the improvement of stock management. Special skills are specified within the 10% range.

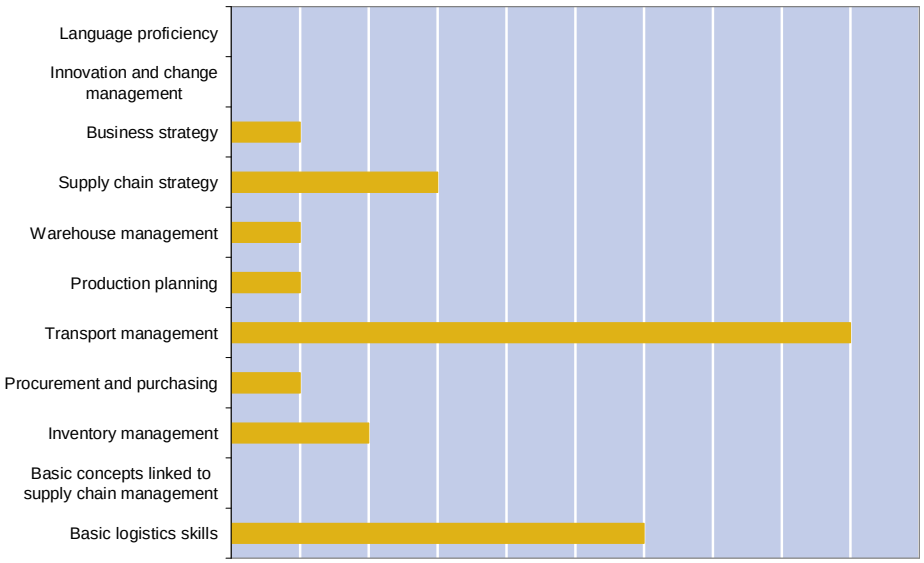

Figure 7 The development needs of personnel competence, manufacturing companies

The necessity of language improvement and innovative management was not mentioned at all. The manufacturing companies are connected with the manufacturing schedule and the matter of sharp transport performance is extremely important for them. That should be especially noted in conditions of heavy traffic, which is typical for Riga and Riga district, as well as in the situation of systematical last two – three years traffic jams at the Latvian – Russian border, that is

European Union – Russian Federation border. That is why the experienced logistic workers, who deal with transport issues correctly and secure the accuracy of production, are important for the businesses mentioned above.

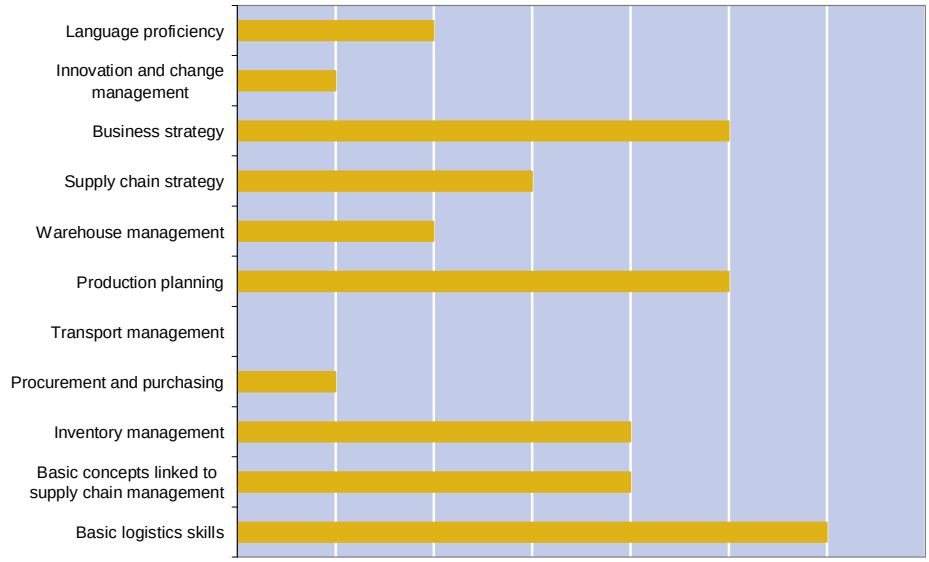

Figure 8 The development needs of personnel competence, trading companies

There is a totally different situation in trade. The majority of respondents agree that it is necessary to develop almost all types of logistic competence (the preference is given to basic knowledge of logistics (60%), business strategy (50%), planning (50%), inventory management (40%) and supply chain management (40%). If there are no answers about transport management, it usually means that companies generally do not have own cargo transport. Transport for them is usually *outsourcing*. The trade companies also take care of personnel language proficiency (20%) and innovation and change management (10%). Partly or indirectly the fact of mentioned above logistic competence necessities can be confirmed by some changing tendencies in Latvian Education System. The main part of universities and Higher Education Institutes and colleges (state and private) has developed special Logistics educational programs. During last two - three years was prepared total about one thousand professionals in the sphere of Logistics. Some of them in addition to knowledge of native language know one or two foreign languages.

3.3 Outsourcing of logistics operations

The share of the companies that use international and local transport as *outsourcing* is up to 90%, while warehouse and forwarding facilities – up to 70%. Near to 30% of companies use order processing, invoicing, inventory management and product customization as outsourcing procedures. In the sphere of logistic information technologies – up to 10%. The volume or extent of using is different. It varies from 1% to 100% in different companies.

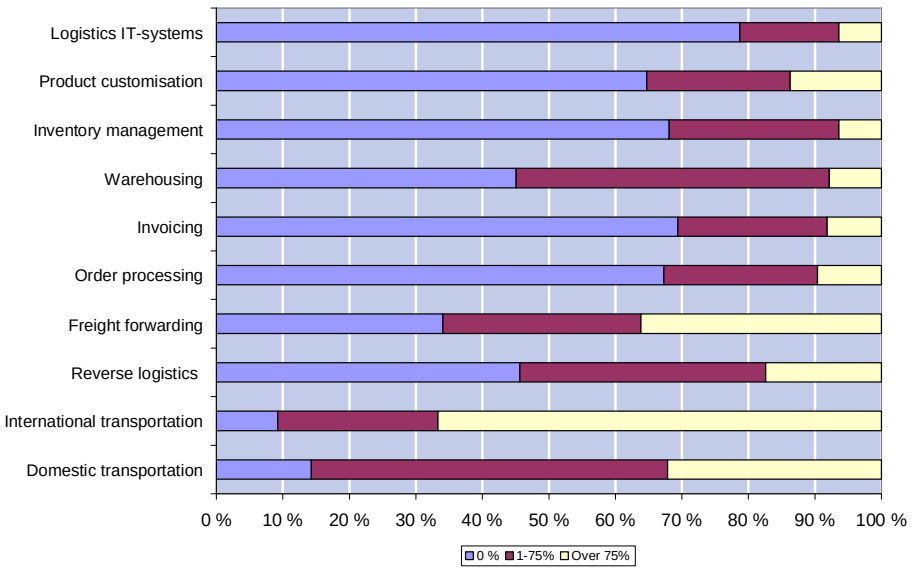

Figure 9 Outsourcing of different logistics functions, companies in Latvia

Approximately the same outsourcing logistics operations statistics was discussed on the International Federation of Warehousing Logistics Association Annual Convention 2006 “Eastern Europe – New Logistics Resources”, that was in Riga on May - June 2006. All these results could be interpreted from three points of view:

a. the main part of companies in the sample are small and micro size and for this reason they do not have enough financial resources for outsourcing;
b. outsourcing operations in Latvia especially for application to service small size firms do not develop their service in relevant manner.
c. it is possible that potential clients do not understand the real value and profit of using represented and advertised on Latvian market outsourcing logistics services.

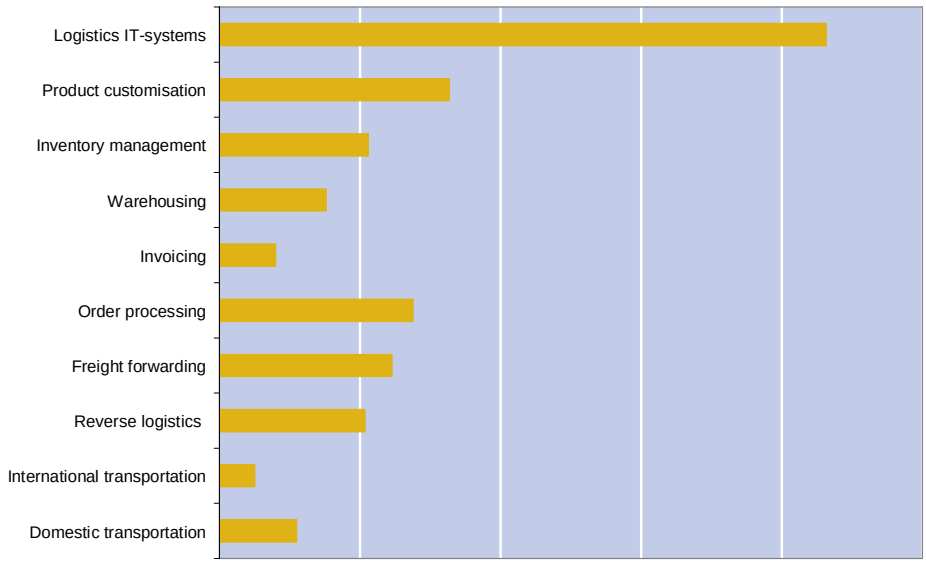

Figure 10 The relative trend of outsourcing, companies in Latvia

As the result of the last analysis (see fig. 10) it is possible to see great positive tendencies (relative trends) in the development of *outsourcing* on the Latvian market. Opportunities are seen in the sphere of logistics information technologies – up to 80%, in order processing and product customisation – up to 30%. There are some growth reserves (up to 20%) in forwarding, inventory management, reverse logistics and warehouse facilities.

3.4 Operating environment

Absolute majority of the companies – production manufacturers (practically up to 90%) estimate their position as good or neutral. Other figures (general business perspectives, availability of production and business facilities, logistics efficiency, and location of competitors) fluctuate only from 0% to 5% and it is confirmation of relatively positive operation environment. Near 20% of respondents note weak transport infrastructure. The transport infrastructure situation is known in Latvian State, Municipal and business circles. The number of all kinds of vehicles is growing constantly, especially road transport ones. To better the transport infrastructure are planned, developed and implemented energetic measures (construction and reconstruction of roads, streets, bridges, motor-car parking places, bettering near-border infrastructure and so on).

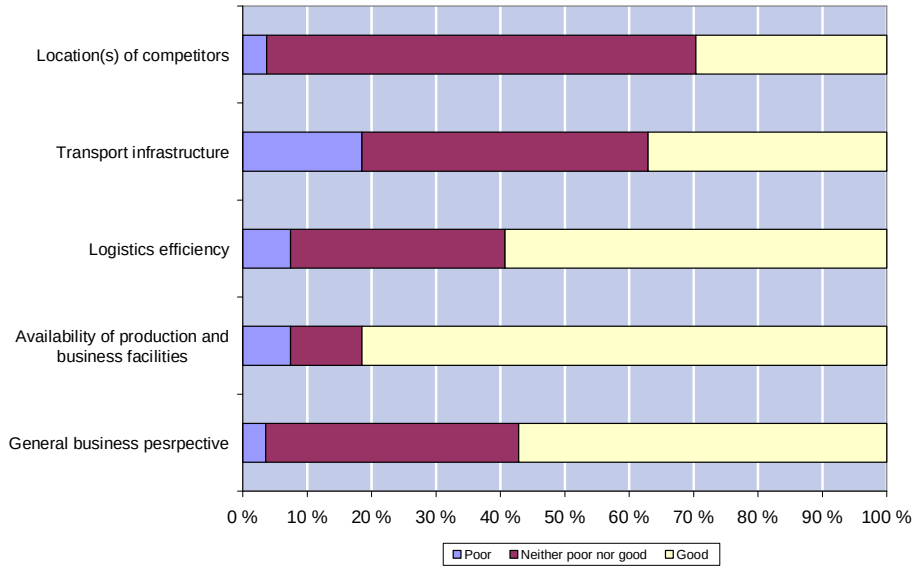

Figure 11 Manufacturing companies' opinions on their operating environment

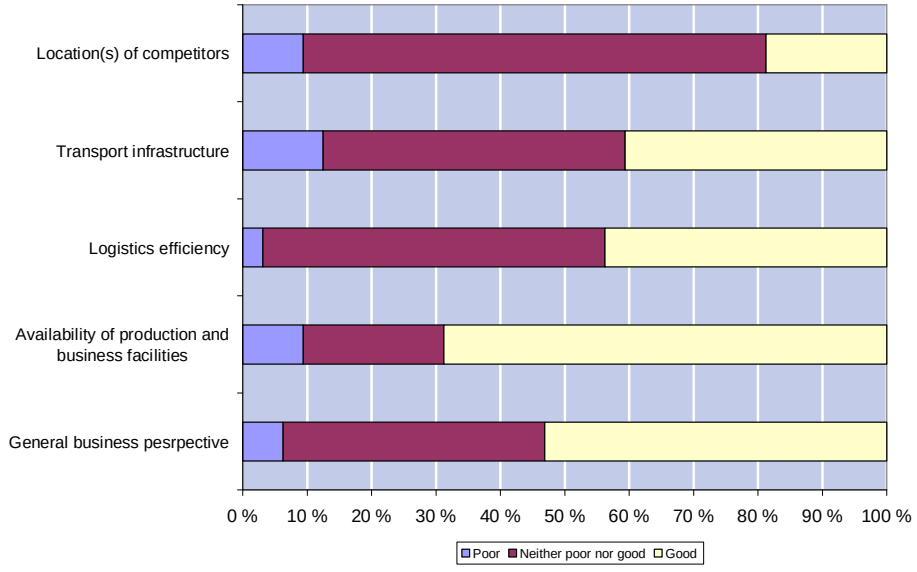

Figure 12 Trading companies' opinions on their operating environment

Near 50% of trade companies estimate their position on Latvian market as good. The main part of trade companies (practically more than 90%) estimate their position as good or neutral. Other figures (general business perspectives, availability of production and business

facilities, logistics efficiency, and location of competitors) fluctuate only from 0% to 10%. As in case of manufacture companies it confirms that operation environment is in relatively positive condition. Near 12% of respondents note weak transport infrastructure. The transport infrastructure situation is known in Latvian State, Municipal and business circles. The number of all kinds of vehicles is growing constantly, especially road transport ones. To better the transport infrastructure are planned, developed and implemented energetic measures (construction and reconstruction of roads, streets, bridges, motor-car parking places, bettering near-border infrastructure and so on).

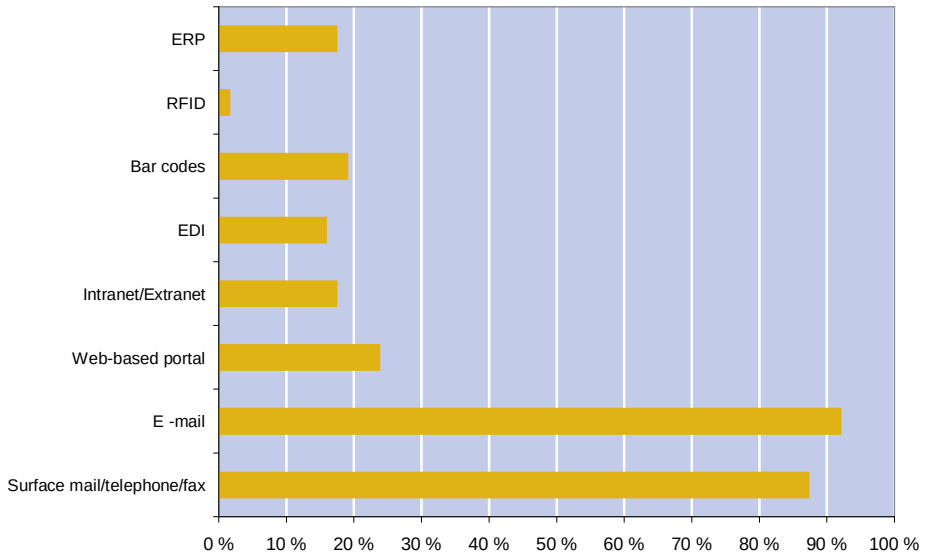

Figure 13 The usage of different ICT-systems, manufacturing and trading companies in Latvia

Usage of information computer technologies in Latvia is growing step by step among the manufacture companies as well as among the trading businesses. Practically 90% of companies use e-mail, surface mail, telephone and faxes. Near 25% of companies use Web – based portal. Extranet and Intranet facilities are used by near 20% of companies interrogated. Approximately the same number of companies (near 20%) uses bar code technologies, usually in European Article Number structure. Near 15% of companies use different kinds of Electronic Data Interchange Standard (EDI), recommended by United Nations Organisation. More special element of information technologies - radio frequency identification (RFID)

technology are used near 2% of respondents. More better situation with using of Enterprise Resource Planning Technology (ERP). It is used by nearly 20% of companies.

On the Latvian market of Information Computer Technologies there are many world class firms – vendors (providers) of such technologies. For example, there are Microsoft, IBM, ORACLE, SAP and so on. A significant positive growth of using ICT is possible some of mentioned above technologies could be used in outsourcing manner.

3.5 Self assessment of the companies

The participating in supply chain management (SCM) system and consequently in its two subsystems (Supply Chain Planning and Supply Chain Execution) claims to be “transparent”. Absolute majority of the manufacture and trade firms (up to 94%) agree to be “transparent” in supply chains and consequently have reserves to raise the efficiency and quality of their activities.

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

	Much worse	Worse	Neither worse nor better	Better	Much better
My firm has been able to reduce the time between order receipt and customer delivery to as close as zero as possible	0	4	15	25	12
My firm is able to meet the quoted or anticipated delivery dates and quantities on a consistent basis	0	3	17	29	8
My firm is able to respond to the needs and wants of key customers	0	2	16	20	17
My firm is abel to notify customers in advance of delivery delays and product shortages	0	4	15	18	17
My firm is able to modify order size, volume or composition during logistics operations	0	4	19	18	10
My firm is able to accommodate delivery times for specific customers	0	1	20	16	18

The answers of companies said that companies try to increase quality of client service – to reduce time between order receipt and goods delivery, to organize goods delivery just in time, to accommodate delivery times for specific customers, to respond to the needs of key customers. In Latvia this wish of companies to work in

SCM structure confirmed by the fact that last year companies aims more at long term contracts than it was earlier.

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

	Strogly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
We regularly monitor and evaluate our logistics costs and performance internally	3	6	4	31	12
We regularly monitor and evaluate logistics costs and performance with selected suppliers and/or customers	4	14	11	21	3
We regularly benchmark logistics performance metrics against our competitors	4	19	13	12	4
Regular monitoring and evaluaton of logistics benefits our firm	0	5	6	24	15
We regularly monitor the environmental effects of our logistics operations	8	14	16	6	4

Approximately half of the companies (52%) pay attention to almost all elements of their own development in supply chain (regular evaluating and monitoring of logistics cost, logistics performance benchmarking and so on). However, near 45% of companies do not realize completely the impact of supply chain management on the results of their activities. The only explanation of this fact may be that it is some micro trade companies, which do their work by short-term contracts on the Latvian – Russian border and the Russian Federation territory, where cost of oil products is not as high as in European Union countries.

Table 5 Companies' self assessment on the importance of logistics in their operations

	Strogly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Logistics has a major impact on our profitability	0	10	9	23	16
Logistics has a major impact on our customer service level	1	2	3	24	27
Logistics is a key source of competitive advantage for our firm	0	11	12	16	17
Logistis is a top management priority in our firm	2	13	12	19	7

About 70% of the companies interrogated connect their success with the development of logistics, about 15% of the companies do not understand, whether logistics influences their activities or not. 17% suppose that it does not. These could be the manufacturing firms that work with local raw materials and have local distribution of goods. In INCOTERMS terminology it could be manufacture companies that work as group E – EXWORK companies.

Table 6 Companies' self assessment on internal collaboration in logistics operations

	Strogly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
We effectively share operational information within our firm	2	6	14	27	8
We are well prepared for internal disturbances and irregularities in our operations	1	7	23	18	6
Our information systems provide operational managers with sufficient and timely information to manage logistics activities	1	10	15	21	8
Strategic planning and target setting is done in collaboration between functions/ departments	1	7	15	23	9

About 30% of the companies interrogated do not care whether it is or is not internal collaboration in logistics. More than 50% suppose that efficiency depends on the correct cooperation with the internal logistic system. About 15% consider that internal logistic process does not need special attention.

Table 7 Companies' self assessment on external collaboration in logistics operations

	Strogly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
We effectively share operational information with selected suppliers and/or customers	0	3	13	32	7
We are well prepared for external disturbances and irregularities in our operations	0	11	23	13	5
Our information systems support the sharing of operational information with selected suppliers and/or customers	0	5	10	12	3
We effectively collaborate with selectd suppliers and/or customers to facilitate operational planning and to improve forecasting	1	1	11	12	4

The same as in table 4 percentage of answers is typical for external collaboration in logistic operations. However, by the positions of preparation to disturbances, support of sharing operational information with suppliers/customers, collaboration with suppliers/customers on planning/forecasting stages the majority of respondents (near 55%) indicate that they basically are ready to cooperate and it is important for business. These procedures of external collaboration in logistics operations depend on developed communication network and transport and logistics centres network and also qualified personnel. In this sphere there are more difficulties. Therefore, there are more opportunities for outsourcing and new technologies development.

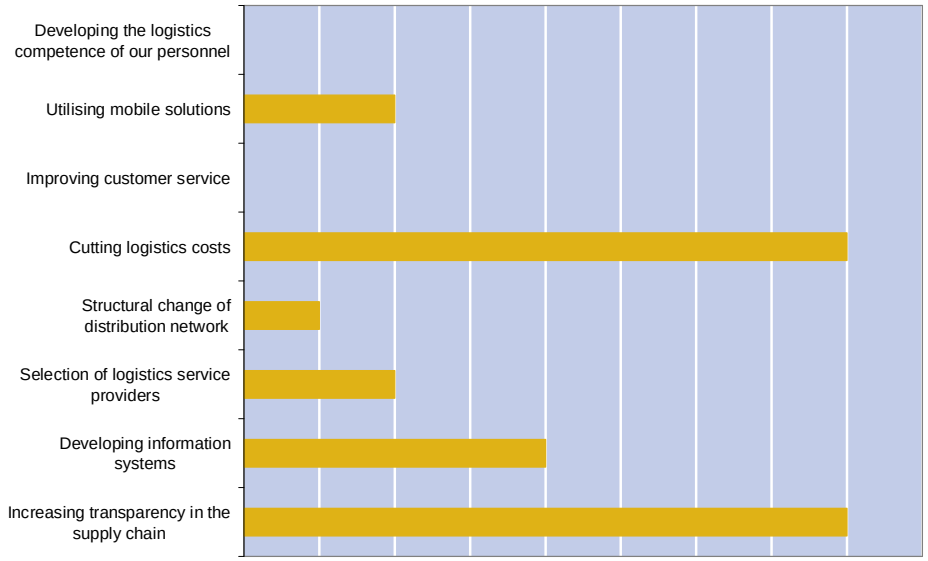

Figure 14 The most important future development needs of manufacturing companies

For manufacturing companies the most favourable tendencies (positive trends) are seen in the development of “transparent” supply chain. It is naturally because the production logistics (manufacture itself) usually is in the centre of supply chain. The same behaviour is observed for reduction of logistic expenses. Next important position pointed is developing of information systems. Some companies indicate the necessity of utilizing mobile solutions and work with selection of logistic providers. Positions - developing of logistics competence of personnel and improving customer service – has zero level mark. The last fact can be interpreted only as a sample error.

4 FINDINGS FROM LOGISTICS SERVICE PROVIDERS

4.1 Client structure and market development

Five-year long tendencies and changes in turnover of the logistic companies are not big. Transport and warehouse facilities are reducing from 52% to 45%. Approximately by the same amount, that is, by 5%, standardized service packages and customised service packages are estimated as “growing”, standardised service packages operations are estimated as “do not change”.

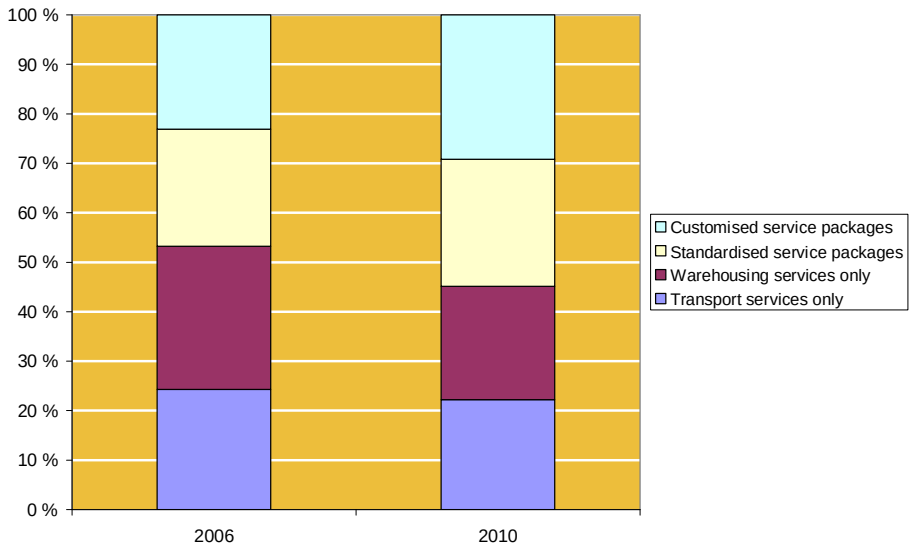

Figure 15 Distribution of turnover in logistic services companies for different types of services 2006 and 2010 (estimate)

This situation may be interpreted as satiation of the market of logistic services. It is possible that respondents tried to take into account future macro economical and political relations. From one point of view it is possible to increase the Latvian logistics service flow. The main

reasons – increasing cargo flows from China through West Europe see ports to Russia and Central Asia republics, increasing trade goods flow between Russia and European Union, and the Latvian – Russian border Agreement finished. From another point of view it is possible a decrease in good flows through Latvia. The main reasons - competition of all states in Baltic region and increase of carrying capacity of the Russian Baltic ports, their infrastructure and also Trans-Siberian railway developing trends.

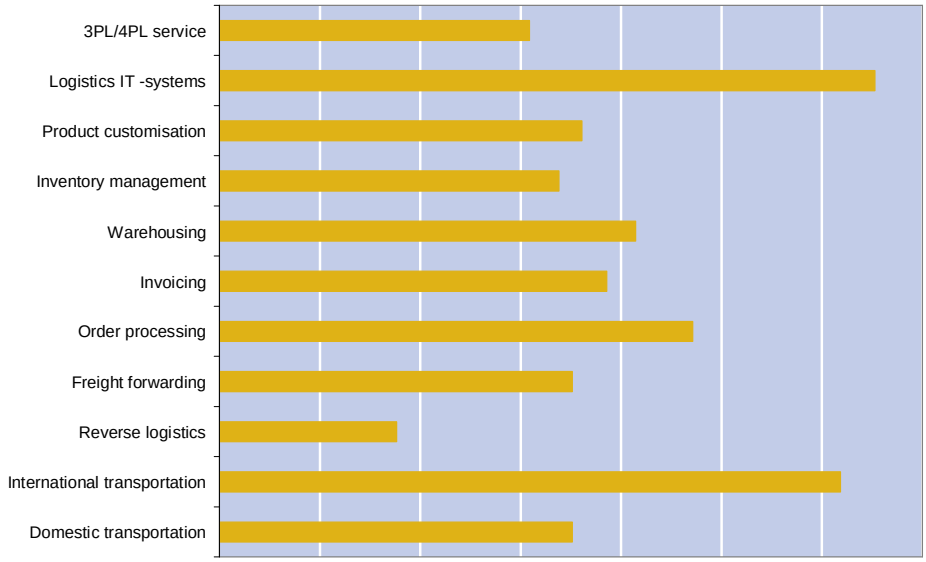

Figure 16 The relative trend of outsourcing, logistics service providers in Latvia

Practically all components logistics operations are essential as outsourcing (international transportation, domestic transportation, freight forwarding, order processing, invoicing, warehousing, inventory management, product customization, 3PL/4PL service). Tendencies in average demand exceed 35% for all logistics operations. Especially great tendencies are observed in demand of international transportations and logistic information systems – more than 60%. The only one minimal demand (about 20%) is reverse logistics. It is possible reverse logistics has not developed yet strongly in Latvia.

4.2 Logistics competence

The same as with Figures 8 for manufacturing companies, the personnel development is necessary in transport management (more than 55%), supply chain management (40%) and in business strategy (30%). The others (language proficiency, innovation management warehousing and service provision planning) have fluctuations from 10% to 20%. And only inventory management (near 5%) does not have special tendencies for growth. It proves that relatively young Latvian logistics try to use modern International and world experience.

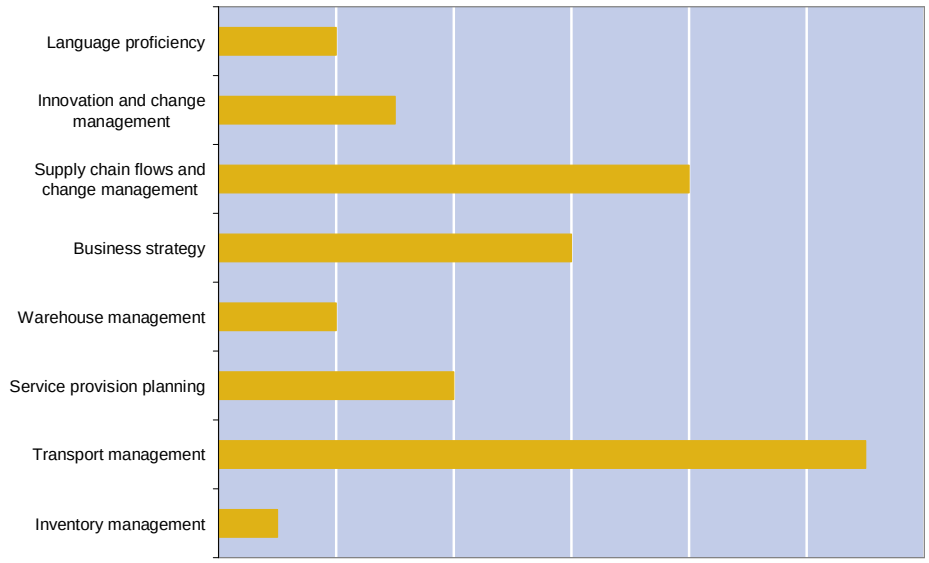

Figure 17 The most important development needs of personnel competence, logistics service providers

4.3 Development needs and threats of the future

The biggest stress (up to 80%) is made on skilled personnel availability. Obviously, it is connected with the significant part of personnel capable of working leaving for European Union countries and natural ageing of population. From this year there is possibility to go abroad for job not only for Latvian citizen but also all the Latvian residents. For example this year only in Ireland there near thirty thousand people from Latvia. As follows from the 2006 Statistical Yearbook of Latvia (see table N5-1, p.83) in the year 2005 the aged

15-64 was 1004 thousand people. So it is about 3% economically active population. The growth in service costs and reduction of the demand for services is stressed (probably because of rising competitiveness).

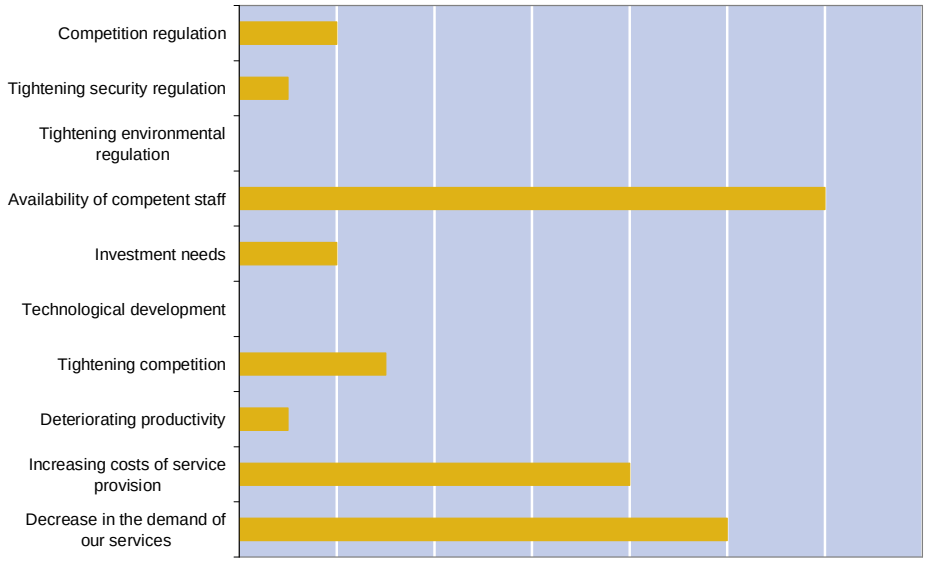

Figure 18 Largest threats to business, logistics service providers

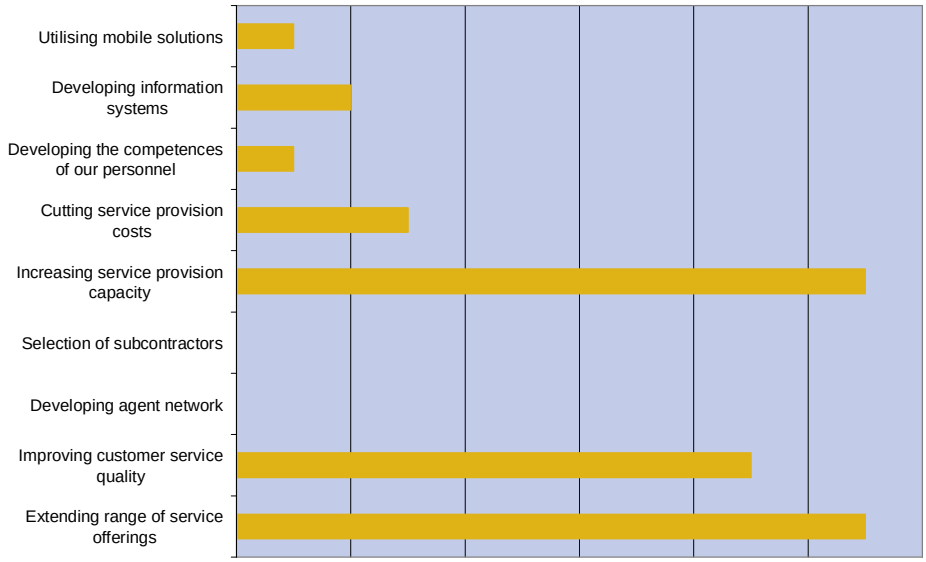

Figure 19 The most important development needs of the future, logistics service providers

As the result of estimation of the future needs we could see as the main direction – services (near 50%). It is necessary to develop the assortment of services, raise the quality of service, lower prices for services. Only 10% respondents pointed on the need of information systems developing, including the mobile ones. It is interesting that none of respondents pointed on subcontractors and agents net developing. It may be interpreted that there are subcontractors and agents nets in Latvia and problem is the quality of their work.

4.4 Operating environment

The majority of Logistics service providers (nearly 60%) suppose that such logistics characteristics as logistics efficiency, availability of production and business facilities, general business perspective are in a good condition in Latvia. Concerning the opinion on the transport infrastructure about 60% of respondents could agree that this characteristic is in good condition, but nearly 20% of respondents assume that transport infrastructure is in a poor condition. According to all other positions provided in this table the opinion of respondents that the situation is poor and varies from 0% to 10%.

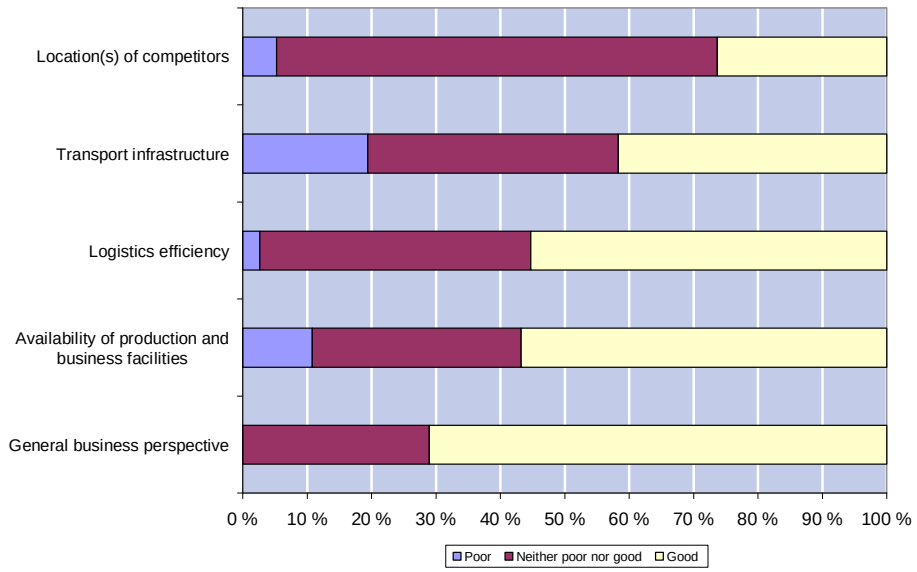

Figure 20 Logistics service providers' opinions on their operating environment

This opinion about the poor transport infrastructure occurred previously in this survey. It proves that it is necessary to work on this problem in order to improve the transport situation in Latvia (e.g. all kinds of transport network, especially roads, seaport infrastructure), because of increasing transport (cargo and passenger) flows from West to East and vice versa direction (including the Member States of the European Union and other countries).

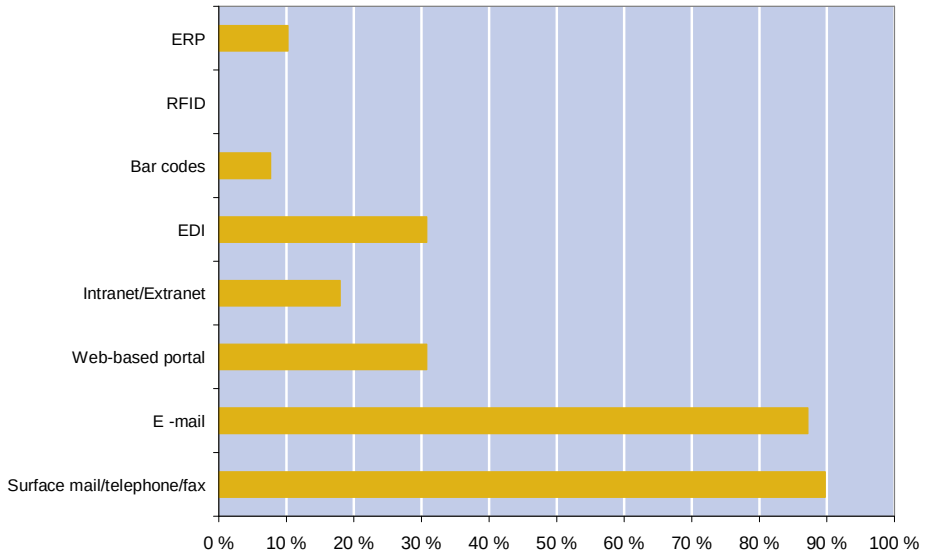

Figure 21 The usage of different ICT-systems, logistics service providers in Latvia

Usage of information computer technologies in Latvia is growing step by step among the logistics service provider companies in the same manner as in manufacturing and trading companies (see fig.14). Almost 90% of companies use e-mail, surface mail, telephone and faxes. About 30% companies use Web – based portal. Extranet and Intranet facilities are used by nearly 18% of companies-respondents. More than 30% of companies use different kinds of Electronic Data Interchange Standard (EDI), recommended by United Nations Organisation. The share of companies nearly 8% uses bar code technologies, usually in European Article Number structure. More special element of information technologies - radio frequency identification (RFID) technology is not used at all at the moment in companies-respondents. More better situation with using of Enterprise Resource Planning Technology (ERP). It is used by nearly 10% of companies. The great difference between sample statistics of the

logistics service provider companies and the same of manufacturing and trading companies is that the first ones do not use RFID technology. Really there are logistics companies in Latvia that use RFID technology in their work. Unfortunately, such companies are not represented in this sample.

It is possible that logistics service providers in Latvia are more active in the business contacts with Information Computer Technologies vendors (providers) on the Latvian market.

4.5 Self assessment of the companies

Absolute majority of the companies indicate their ability to influence supply chain operations (93%), to improve all kinds of logistics service operations to all their clients and especially key clients and through that to raise the efficiency and quality of their activities.

Table 8 Companies' self assessment on complexity in the supply chain

	Much worse	Worse	Neither worse nor better	Better	Much better
My firm has been able to reduce the time between order receipt and customer delivery to as close as zero as possible	1	1	5	17	13
My firm is able to meet the quoted or anticipated delivery dates and quantities on a consistent basis	2	0	4	15	15
My firm is able to respond to the needs and wants of key customers	2	1	3	13	18
My firm is abel to notify customers in advance of delivery delays and product shortages	1	0	9	17	11
My firm is able to modify order size, volume or composition during logistics operations	2	1	4	16	14
My firm is able to accommodate delivery times for specific customers	2	2	4	13	15

The companies try to reduce time between order receipt and goods delivery (near 84%), to accommodate delivery times for specific customers (near 80%), to respond to the needs of key customers (near 84%), to modify its own facilities to the wishes of clients (neat 78%).

Logistics companies as manufacture and trade companies try to aim at long term contracts. Some private (unpublished) date tells that many of medium size logistics companies in Riga usually have long-term contracts near 60-70% of total number of contracts.

About 60% of the companies are concerned and understand their role in supply chain today and in the future. About 30% of companies use supply chain management mechanism subconsciously and only 10% of companies consider it as unimportant.

Table 9 Companies' self assessment on the future of supply chain

	Strogly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
We regularly monitor and evaluate our logistics costs and performance internally	0	1	8	15	13
We regularly monitor and evaluate logistics costs and performance with selected suppliers and/or customers	1	6	11	15	4
We regularly benchmark logistics performance metrics against our competitors	1	1	11	15	7
Regular monitoring and evaluaton of logistics benefits our firm	0	0	9	12	15
We regularly monitor the environmental effects of our logistics operations	3	5	20	3	4

All the companies pay attention to almost all elements of their own development in supply chain (regular evaluating and monitoring of logistics cost, logistics performance benchmarking and so on). However, near 40% of companies do not realize completely the impact of supply chain management on the results of their activities in the future. Like in case of manufacture and trade companies the possible explanation of this fact that it is some micro companies, which do their work by short-term contracts on the Latvian – Russian border and the Russian Federation territory, where cost of oil products is not as high as in European Union countries.

Table 10 Companies' self assessment on internal collaboration in logistics operations

	Strogly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
We effectively share operational information within our firm	0	0	8	19	10
We are well prepared for internal disturbances and irregularities in our operations	0	3	12	17	4
Our information systems provide operational managers with sufficient and timely information to manage logistics activities	0	2	10	16	8
Strategic planning and target setting is done in collaboration between functions/ departments	0	2	8	18	8

About 70% of the companies suppose that internal collaboration in firm aims at good coordination of all functions and is an important element of logistics work. Near 70% of answers tell that companies try to share information within firm, to be ready to meet disturbances, to have relevant information system and to make effective planning system. There are no strict objections (the strongly disagree answer number is zero) against company inner optimization.

Table 11 Companies' self assessment on external collaboration in logistics operations

	Strogly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
We effectively share operational information with selected suppliers and/or customers	0	0	7	26	5
We are well prepared for external disturbances and irregularities in our operations	0	2	16	19	1
Our information systems support the sharing of operational information with selected suppliers and/or customers	0	2	11	20	5
We effectively collaborate with selectd suppliers and/or customers to facilitate operational planning and to improve forecasting	0	1	11	21	5

Absolute majority of answers (near 70%) emphasize that high quality external collaboration is necessary practically on all the stages of logistics operations.

Percentage of preparation to external disturbances (near 50%), support of sharing operational information with suppliers/customers (near 80%), and collaboration with suppliers/customers on

planning/forecasting stages (near 70%) indicates that respondents are ready to cooperate and it is important for business. These procedures of external collaboration in logistics operations depend on communication network, transport and logistics centres network and also qualified personnel. In this sphere there are more difficulties. Therefore, there are more opportunities for outsourcing and new technologies development in the future.

5 SUMMARY AND CONCLUSIONS

The selected statistical data of the survey, which was carried out in Latvian enterprises, has been analyzed. In connection with the fact that the main subject of the survey was logistics, which is practiced practically by every Latvian enterprise to certain extent, it may be supposed that the results of the survey reflect the majority of vital characteristics and problems of logistic service in Latvia.

1. The opinions of businessmen from three economy branches – production, trade and logistic service – are reflected in the survey.
2. The opinions of companies with different production output (large, medium, small and micro) are reflected in the survey as well. Medium and small (including micro) enterprises are shown more representatively in the sample. That complies with the aim of the survey and reflects common proportions of distribution of the universal set of Latvian enterprises by production output.
3. The questions were answered mostly by middle and top managers and experts, that is, managers with rather high qualification and working experience, so the answers may be considered suitable for the real situation in Latvian logistics.
4. Manufacturing and trading companies suppose that logistics expenses will grow.
5. All companies stressed that it is necessary to raise competence and qualification of personnel practically in every logistic activity (basic logistics skills, supply chain management, transport management, production logistics and etc.).
6. Practically all companies have high potential in the area of using outsourcing in international and local logistic operations, especially in the area of using information technologies in logistics.
7. Self-evaluation of companies - logistic service providers shows that:
    - companies realize the importance of the idea of “supply chain management” and would like to use its advantages competently and completely;

- companies agree to their transparency in supply chain for improving the quality of customers' service and securing the long-term cooperation with chain partners;
- companies use practically 100% of e-mail, fax and telephone opportunities and they would like to turn to new opportunities offered by modern Information Computer Technologies (Web-based logistics portal, Intranet/Extranet, bar codes, Electronic Data Interchange (EDI), Radio Frequency Identification (RFID)).

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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"]

T14.1. 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 Partly / 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

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3:2007 Aggregated logistics survey report *(working title)*
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