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EXPERT INTERVIEWS IN ESTONIA -

Results and analysis of the intersectoral expert interviews in the field of logistics and ICT

Ain Kiisler and
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Results and analysis of the intersectoral expert interviews in the field of logistics and ICT

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EXECUTIVE SUMMARY

This paper represents the views of both logistics and Information and Communication Technologies (ICT) experts in Estonia. This study is a part of the LogOn Baltic project. The purpose of LogOn Baltic is to present solutions to improve the interplay between logistics and ICT competence and spatial planning and strengthening Small and Medium-sized Enterprises (SMEs) competitiveness in the Baltic Sea region. 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.

From the logistics sector 8 experts were interviewed, 7 from private sector and 1 from support initiative organization. To cover ICT experts' point of view, total of 8 people were interviewed including representatives of local authority, support initiatives, research institution and several private companies.

The local logistics trends most often mentioned by experts are the following:

- Extensive logistics outsourcing, particularly in transportation
- Development of partnerships between companies
- Increasing focus on warehousing
- Logistics is seen as measure for (labour) costs reduction
- Development of (intermodal) container and trailer transit trade
- Continuing retail trade concentration
- Widening implementation and use of bar and matrix codes
- Increasing share of Asian suppliers in sourcing

Most often mentioned ICT trends are

- Widening use of Web and Internet based solutions
- ITC systems integration
- Transition to personal solutions
- Globalization
- Active and innovative clients

Local companies must have numerous business contacts with Poland & Baltic Region (more with Latvia and Lithuania than with Poland) and Scandinavia. Some contacts are established with Germany, but minimal contacts with Russian companies mainly due to uncertainty (border crossings, cash flows, etc.) and cultural differences.

Concerning cooperation constraints and problems in BSR, there are no significant constraints with partners from EC countries, except sometimes supercilious behaviour by big German, Scandinavian and Polish suppliers due to low purchasing power of local companies. Also time consuming decision process in Sweden was mentioned by some of experts. The biggest cooperation problems are with Russian partners due to uncertainty, overpoliticised business relations, difficulties in achieving win-win relationships and differences in understanding values.

Surprisingly only small number of logistics experts from private companies knew some logistics or ICT related regional development activities. No one was able to estimate the success of regional development projects due to lack of information. Seems that private sector and local authorities are acting in different worlds - private sector has no information what authorities do; authorities have no information what private sector need and suppose. ICT sector experts were more informed about different activities and able to provide long lists. Still the differences between private companies and support structures were significant.

By unanimous opinion of interviewed logistics experts the main key regional development issue in logistics is the poor quality of road infrastructure. Also the lacking possibilities for using rail transport in domestic distribution and low level of logistics (vocational training) education system were mentioned.

Region main logistics strengths:

- Labour skills and abilities in operating in conditions of limited / unbalanced logistics volumes and lacking economies of scale
- Favourable geographical location in relation to main suppliers and clients
- Modern solutions (ITC, terminals, etc) – development started only recently, no out of dated solutions

Region main logistics weaknesses:

- The Russian trade & transit potential has not realized due to unsatisfying political relations
- Lack of economies of scale – small market, small partners
- Small attention to long term planning and long term investments

Key issue in the ICT sector mentioned by sector experts is lack of qualified work force – specialists with higher ICT training. Limited access to internet in the rural areas could also become one of the

bottlenecks limiting future developments besides the problem that companies are not willing to make investments and innovate.

The region ICT strengths mentioned by the experts are:

- Well developed ICT infrastructure and high competition
- Willingness to use ICT solutions
- Public sector support in developing and using ICT solutions

Main problems of ICT in the region are:

- Public sector has no clear vision on how to develop ICT sector
- Educational issues – poor vocational education and decreasing popularity of ICT specialties in the higher education level
- People do not understand all the opportunities ICT offers

The logistics competence level in experts' companies is rated high or very high. Same in the region is rated acceptable or high. Local authorities' logistics competence level is rated acceptable or rather poor.

Majority of logistics experts (63%) assess the local authorities support and policy in logistics issues neutrally – neither unsatisfied nor satisfied. The rest of 37% are unsatisfied. Generally experts are satisfied with legislation and minimal state interference into business but dissatisfied with quality of transportation infrastructure.

Support to ICT is evaluated as rather unsatisfied than satisfied by the sector experts due to lack of clear vision mentioned above. This is leading to support mechanisms not suitable for most of Estonian ICT companies. All logistics experts are unanimously satisfied wit local authorities ICT support and policy.

The most effective measures for further improvement of logistics operations in experts' companies are professional training for better skills, setup of new DC for better process organisation, integration of logistics operations and ICT and / or expansion into new markets or increase of business volumes in order to achieve economies of scale. ICT improvement possibilities in logistics companies are in ICT systems integration, implementation or upgrading of WMS, TMS and track & trace systems and ICT training.

ICT companies see best opportunities in product development and systematic training of the employees. Local authorities can support by further developing infrastructure and vision.

LÜHIKOKKUVÕTE

Käesolev töö annab ülevaate logistika- ning informatsiooni- ja kommunikatsioonitehnoloogia (edaspidi IKT) valdkonna ekspertide hinnangutest. Logistikasektorist intervjueeriti kokku 8 eksperti, 7 neist esindab erasektorist ja üks toetusinitsiatiivi. IKT spetsialistide vaateid esitasid 8 inimest, kes esindavad nii kohalikku omavalitsust, tugistruktuure, uurimisasutusi kui ka eraettevõtteid.

Ekspertide poolt sagedamini mainitud logistilised trendid Eestis on järgmised:

- Ulatuslik logistiline outsourcing, eriti transporditeenuste osas
- Ettevõtetevaheliste partnerlussuhete areng
- Kasvav tähelepanu laondusele
- Logistikat nähakse abinõuna (tööjõu)kulude vähendamiseks
- (Intermodaalse) konteineri- ja treilerikaupade transiidi kasv
- Kasvav jaekaubanduse kontsentratsioon
- Laienev riba- ja maatrikskoodide juurutamine ja kasutamine
- Kasvav Aasia tarnijate osakaal sisseostutegevuses

Sagedamini mainitud ICT trendid olid:

- Laienev interneti ja internetipõhiste lahenduste kasutamine
- IKT süsteemide integreerimine
- Üleminek personaalsetele lahendustele
- Globaliseerumine
- Aktiivsed ja innovatiivsed kliendid

Läänemere regioonis on kohalikel firmadel kõige arvukamalt ärikontakte Poola & Baltikumi (peamiselt Läti ja Leeduga, vähem Poolaga) ja Skandinaavia regiooniga. Mõned kontaktid on loodud Saksamaaga. Kõige vähem ärikontakte on Venemaaga, seda tänu ebakindlusele (piiriületused, probleemid sularahaarveldustega jms.) ja kultuurierinevustele.

Mis puudutab koostöötakistusi ja –probleeme Läänemere regioonis, siis suhtlemisel Euroopa Liidus asuvate partneritega märkimisväärseid probleeme pole, välja arvatud aeg-ajalt esinev suurte Saksa, Skandinaavia ja Poola tarnijate üleolev suhtumine. See on tingitud kohalike firmade väikestest sisseostumahtudest ja seega vähesest tähtsusest paljude rahvusvaheliste tarnijate jaoks. Samuti mainisid mõned eksperdid aeganõudvat otsustusprotsessi Rootsis.

Kõige suuremad koostööprobleemid on Vene partneritega tänu ebakindlusele, ülepolitiseeritud ärisuhetele, raskustele saavutada win-win suhteid ja erinevale arusaamisele üldistest väärtustest.

Üllatavalt väike arv logistikaeksperte erafirmadest teadis mõnda logistika ja ICT-ga seonduvat regionaalse arengu projekti. Ükski ekspert ei olnud võimeline selliste projektide edukust hindama, viidates informatsiooni puudumisele. Tundub, et erasektor ja riigiorganid tegutsevad eri maailmades – erasektor ei tea, mida riigiorganid teevad; riigiorganitel puudub informatsioon, mida erasektor vajab või asjast arvab. IKT sektori eksperdid olid algatustest rohkem informeeritud ja võimelised loetlema mitmeid. Siiski oli ka siin sektoris tuntav vahe erafirmade ja tugistruktuuride esindajate teadmistes.

Eksperdid logistikasektorist tunnistasid ühehäälselt regiooni suurimaks logistikaga seonduvaks arenguprobleemiks autoteede kehva kvaliteedi. Samuti mainiti võimaluste puudumist kasutada raudteetransporti riigisisestel jaotusvedudel ning logistilise (kutse)hariduse madalat taset.

Eesti peamised logistilised tugevused:

- Tööjõu oskused ja võimekus tegutseda piiratud ning tasakaalustamata mahtude ja puuduva mastaabiefekti tingimustes.
- Soodne geograafiline asend peamiste klientide ja tarnijate suhtes
- Kaasaegsed logistilised lahendused (ITC, terminalid, jms) – areng algas alles hiljuti, puuduvad vananenud lahendused.

Eesti peamised logistilised nõrkused:

- Venemaa kaubandus ja transiidipotentsiaali pole suudetud realiseerida mitterahuldavate poliitiliste suhete tõttu.
- Mastaabiefekti puudumine – väike turg, väiksed partnerid.
- Vähene tähelepanu pikaajalisele planeerimisele ja pikaajalistele investeeringutele.

Suurimaid probleeme IKT sektoris on ekspertide sõnul kvalifitseeritud tööjõu – kõrgema IKT alase haridusega spetsialistide - puudus. Ka maapiirkondade puudulik juurdepääs internetile võib saada üheks oluliseks pudelikaelaks, mis pidurdab edasisi arenguid; lisaks üldisele Eesti ettevõtete vähesele valmidusele investeerida ja uudseid lahendusi välja töötada.

Ekspertide poolt välja toodud tugevused IKT valdkonnas on:

- Hästiarenenud infrastruktuur ja tugev konkurents
- Valmisolek uudseid lahendusi kasutada
- Riiklik tugi IKT lahenduste arendamisel ja kasutamisel

Põhilised probleemid IKT sektoris:

- Riigil puudub selge visioon, kuidas sektorit arendada
- Puudulik kutseharidus ja IKT erialade kahanev populaarsus kõrgemal õppetasemel
- Inimesed ei tunneta, mida IKT tegelikult võimaldab

Eksperdid hindasid logistilise kompetentsi taset oma firmades kõrgeks või väga kõrgeks. Eesti logistika taset teiste regioonidega võrreldes hinnati rahuldavaks või kõrgeks. Riigiorganite logistilise kompetentsi taseme hindasid eksperdid rahuldavaks või küsitavaks.

Enamus küsitletud ekspertidest (63%) hindab võimuorganite logistikaalast toetust ja poliitikat neutraalselt – ei rahul ega rahulolematu. Ülejäänud 37% olid rahulolematud.. Üldiselt on eksperdid rahul seadusandluse ja riigipoolse minimaalse sekkumisega äritegevusse, kuid rahulolematud transpordi infrastruktuuri kvaliteediga.

Tuge IKT sektorile hindasid valdkonna eksperdid pigem mitterahuldavaks kui rahuldavaks tänu juba eelpool mainitud selge visiooni puudumisele, mis viib Eesti IKT ettevõtetele sobimatute tugimehhanismide väljaarendamisele. Kõik (antud küsimusele vastanud) logistikaeksperdid olid samas ühehäälselt rahul riigivõimude IKT-alase toetuse ja poliitikaga.

Efektiivseimad abinõud logistilise tegevuse edasiseks parendamiseks ekspertide firmades on erialane koolitus, uue jaotuskeskuse rajamine protsesside paremaks organiseerimiseks, logistiliste tegevuste ja IKT integreerimine ning uutele turgudele laienemine ja / või tegevusmahtude suurendamine eesmärgiga saavutada mastaabiefekti.

IKT parendamise võimalustena näevad logistikaeksperdid IKT süsteemide integreerimist, WMS (Warehouse Management System), TMS (Transport Management System) ja jälgimissüsteemide juurutamist või moderniseerimist ning ICT alast koolitust.

IKT eksperdid ise loodavad paremaid tulemusi tootearenduse intensiivistamisest ja töötajate järjepidevast koolitusest. Kohalikud võimuorganid saavad protsesse toetada infrastruktuuri jätkuvalt arendades ja visiooni selgitades.

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LIST OF ABBREVIATIONS

DC	Distribution Centre
FMCG	Fast moving Consumer Goods
ICT	Information & Communications Technology
TMS	Transport Management System
WMS	Warehouse Management System

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

The regional partners in Estonia are Tallinn City Government, Tartu Science Park and Estonian Logistics Union.

Tallinn, the capital of Estonia, is located in the Northern Europe on the Baltic Sea and is a well-known Hanseatic Town. Tallinn is the largest city in Estonia and has developed into a major economical, political, cultural and social centre and tourist attraction of the country.

Tallinn City Government is the local government's executive body that is in charge of city departments, institutions administered by departments, and responsible for implementing policies and programs. Tallinn City Government fulfils the assignments given to it by legislative drafting, economic activity, control and the involvement of the residents. One of the main aims of Tallinn City Government is to create economical environment to promote entrepreneurship, attract investments and modernise economical structure.

Tartu is the second largest city and the centre of Southern Estonia. **Tartu Science Park**, the oldest science park in the Baltics, supports business innovation activities in the region by networking with universities, public and private sector. The technology incubator offers a variety of services to start-up companies and the ICT Centre

organises seminars, courses and contests for students and mediates several national and international ICT activities. Tartu Science Park also offers help to foreign companies in extending business to Estonia.

Estonian Logistics Association acts as an association for organisations, foundations and people who are involved in logistics. Estonian Logistics Association honours the principles of competitiveness of companies, co-operation, competition, development, professional skills and appreciation of human labour and the main goal is to promote national and international competitiveness in the area of logistics.

1.3 Expert interview introduction

Some of the main methodologies used within the LogOn Baltic project are expert interviews and empirical web-based surveys based on a large number of respondents. While the surveys mainly focus on the current status and needs of the logistics community and allow for a quantitative analysis, the expert interviews mainly follow a qualitative approach. The aim is to investigate regional strengths and weaknesses with respect to logistics and ICT. Nevertheless, expectations and future visions of different kinds of institutions and companies are to be determined as well.

The willingness to answer questions in a greater depth and in an open discussion can only be achieved by personal and individual conversations with selected interview partners. Furthermore, it is not only the aim to analyse the current situation but also the background and causes which lead to this situation as well as to give recommendations and to determine future trends of regional development. Thus, the complexity and multifariousness of the research questions require personal interviews and a qualitative approach. With ten to fifteen interviews it is possible to cover the major views on regional development regarding logistics and ICT.

The expert interviews will play an important role in the stage of the project when it comes to the development of a comparative report on the Baltic Sea Region (BSR). Since expert meetings will take place in all participating regions around the Baltic Sea, best practices and recommendations will be deduced for the regional decision makers.

2 INTERVIEW DESIGN

2.1 Target group and sample

The objective was to choose a heterogeneous target group, in order to guarantee for an analysis from as many perspectives as possible. In each region, ten to fifteen interview partners were selected, representing seven different institution or company groups. Another aspect in selecting the companies or institutions was the possibility to contact potential interview partners on a higher management level. Through this it could be assured that the interview partners had the willingness to answer the questions and had a good overview of the development of the industry in the region.

The private sector is represented by four different company groups: The manufacturing industry, the retail industry, logistics service providers and logistics consultants. The latter two were chosen because their employees normally have experience with a lot of different clients and/or projects. The following figure shows the target groups distinguished by the public and private sector.

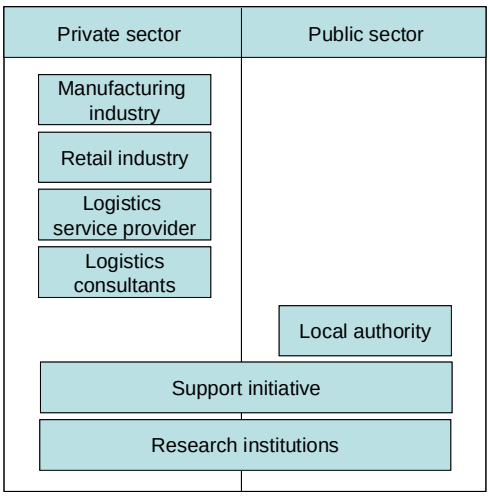

Figure 1 Expert interviews target group

The public sector is mainly represented by the local authorities who are responsible for regional development. Support initiatives may either belong to the private or the public sector or are public-private-partnership. Both institutional groups have experience in initiating, financing and executing regional development activities. Last, representatives from research institutions complete the target group by an independent and research-oriented perspective.

For the Estonian region, the distribution of the interview partners can be withdrawn from the following table:

Table 1 The list of Estonian experts

Group	Name of company / institution	Interview partner
Logistics service provider	DSV Estonia AS	Managing Director
	Schenker AS	Managing Director & Logistics Director
	Via 3L aAS	Logistics Director
Manufacturing industry	Elcoteq AS	Logistics Manager & Forwarding Manager
	AGA	DMS Manager
Wholesale & retail industry	Baltika AS	Logistics Manager
	ETK AS	Adviser of Strategic Development and Cooperation
	Magnum Medical AS	Logistics Director
	Elion AS	Quality Director
	Neuron Systems OÜ	Director
Support Initiative	Transestonia OÜ (transit trade support initiative)	Director
	Estonian Association of Information Technology and Telecommunications	Managing Director
	Tartu Science Park	Project Manager
Research Institution	Tartu University department of Mathematics	Assistant professor
Logistics Consultant	Telema AS	Managing Director
Local Authority	Tartu City Government	Consultant

This paper represents the views of 8 logistics experts, 7 from private sector and 1 from support initiative and 8 ICT experts, 4 from private sector and 4 from different support structures.

2.2 Main topics covered in the interview

The interviews were conducted according to a half-standardized interview guideline. Most questions were open end questions. A quantitative scale was used in addition to qualitative answers, when it seemed useful for a later comparison of the interviews.

The interview guideline comprises five major parts. The first part covers general trends regarding logistics and ICT. The second part deals with current and planned business contacts in the BSR. Furthermore, barriers and problems of doing business in the BSR are discussed. Part three analyzes regional development measures. Starting from key issues and from the evaluation of regional development activities, the strengths and weaknesses of the region, the competence level with respect to logistics and ICT and proposals for improvements are examined. Part four addresses the qualification level in logistics and ICT as well as future needs for education. The guideline finishes with expectations, wishes and concrete recommendations of the interview partners.

3 FINDINGS FROM THE INTERVIEWS CONDUCTED

The structure of this chapter follows the structure of the interview guideline. Therefore, sections 3.1 to 3.5 refer to the five parts of the guideline. Chapter 4 summarizes and interprets the most important results.

3.1 Findings regarding trends in logistics and ICT

3.1.1 Trends in logistics

The logistics trends mentioned by experts about their companies and region are summarised and generalized below. The trends are ranked by the number of times mentioned (number in brackets after trend), more often mentioned first. Similar opinions are generalised into common trend (text in bold) followed by comments and concrete expert opinions belonging under it (in normal text).

1. **Extensive use of logistics outsourcing in Estonian companies (8):** particularly transportation but the assortment of other logistics activities being outsourced is also widening. Logistics service providers mentioned the trends of increasing demand for integrated logistics service packages (1), increasing importance of dedicated value added services (1) and increasing requirements to logistics services quality and flexibility (1).
2. **Tightening cooperation, process integration and development of partnerships between companies (7),** particularly in order fulfilment.
3. **More focus on warehousing (7)** Centralization of warehousing up to pan Baltic + Finland, Poland, Sweden level (2). Location of DC-s is becoming more and more important (1). Boom of modern DC-s building (1): widely used practice that manufacturing, trading or logistics company design and

build DC, sells it and then will rent it from new owner who is now responsible for maintenance. Increasing need for good quality warehousing space (enough loading gates and parking space, good accessibility) (1). Warehousing processes automation in order to keep down costs (1).

4. **Logistics is seen as measure for (labour) costs reduction (5).** Increasing costs, particularly of labour force companies to find more effective solutions and develop cooperation and partnerships (2). Labour shortage causes transport and warehousing reorganisation in companies (1). Main attention still on cost saving instead of value added (1). Warehousing processes automation in order to keep costs down (1).
5. **Estonian container and trailer transit trade is developing but there are emerging problems with infrastructure bottlenecks and continuing problems with Russia (5).** Increase of east-west and north-south container and trailer transit volumes (1). Increasing share of intermodal transports (sea-rail, road- rail) (1). Emerge of infrastructure bottlenecks (1). Estonia has not been able to realize its geographical location advantages in relation to Russia (1): border crossing and customs procedures too complicated in comparison with Latvia and Finland. Russia has no political will to make business with Estonia (1).
6. **Continuing retail trade concentration resulting in narrowing inventory assortments (economies of scale) and increasing role of retailers in supply chains (3).** Also increase of retailers inventory levels (1).
7. **Widening implementation and use of bar and matrix codes (3).**
8. **Increasing share of Asian suppliers in sourcing (2).**

Above are the trends mentioned at least twice. Below are the logistics trends mentioned only once:

- Suppliers' concentration
- Powerful increase of logistics services volumes
- Widening process standardisation
- Increasing dependency on global logistics
- Increasing Tallinn centeredness in domestic distribution due to economy and population concentration into capital and its hinterland area.
- Increasing efficiency of domestic rail transportation – the bottleneck is the lack of land for loading terminals

3.1.2 Trends in ICT

The ICT trends mentioned by experts about their companies and region are summarised and generalized below. The trends are ranked by the number of times mentioned (number in brackets after trend), more often mentioned first. Similar opinions are generalised into common trend (text in bold) followed by comments and concrete expert opinions belonging under it (in normal text).

There was one contradiction between expert opinions concerning the estimation of ICT innovativeness of local companies. Two experts from the same industry, logistics services providers have different point of views in this. One expert believes that "people are very innovative in using newest ICT solutions" in Estonia. By opinion of other "logistics service providers are often couple of steps ahead of their clients demand in ICT matter – e.g. major part of clients are not still interested in ordering via Website or use track & trace solutions despite these are available". This contradiction can by explained by fact, that ICT usage level in Estonian companies is extremely diverse.

1. **Widening use of Web and Internet based solutions (13)** – EDI communication type is already self evident in some companies(7), wireless technologies (1), ordering and logistics are internet-based (1), demand for access to ICT solutions (1), free access to internet (1), internet spreading (1), mobile and wireless solutions spreading (1)
2. **ICT systems integration (10)** - via EDI (payments, invoicing, inventory management, fulfilment, etc.) (7), integration of ICT and media (1), importance of ICT in everyday work (1), development of information and informing systems (1)
3. **Transition to tailor-made solutions (7)** – Transition to “thin client” solutions (1), focus on the needs of the clients (1), growing need to personal solutions (1), inability to solve problems using existing solutions (1), common solutions too complicated (1), existing solutions try to solve everything (1), solutions offered in world market do not comply with local needs and are too expensive (1)
4. **Globalization (5)** – reduction of servers (1), concentrating on global data processing centres (1), Scandinavian-background warehouses concentrating to Latvia and Lithuania (1), purchase concentrating on Eastern Europe (1), transition to global software solutions (1)

5. **Active and innovative clients (4)** – active and innovative clients (1), IT-generation growing (1), IT-hype in Estonia (1), people are very innovative in using newest ICT solutions (1)
6. **Widening use of VMI solutions (2)**

Above are the trends mentioned at least twice. Below are the logistics trends mentioned only one time:

- Lack of good logistics WMS and TMS software for local needs.
- Introduction of fleet management programs for distribution.
- Attempts to become paperless (EDI, digital archiving).
- Government is coming close to private sector through IT solutions (e.g. ID, authentication, and use of EDI by Customs and Tax office).
- Logistics service providers are often couple of steps ahead of their clients demand in ICT matter (1) – e.g. major part of clients are not still interested in ordering via Website or use track & trace solutions despite these are available.
- Very different ITC level in different Estonian companies.
- One standard based wireless internet connection covering all Estonia.
- Increase in automation
- Telematics and intelligent lead systems in transportation
- Changing legislation from EU and Estonian authorities
- Competition - lots of providers
- Lack of specialists

3.2 Findings regarding business connections in the Baltic Sea Region

3.2.1 Current business contacts and projects in the BSR

Table 2 Business contacts and projects in the BSR

Number of contact	0-5	6-15	16-25	>25
Federal Republic of Germany	6	1	1	3
Poland and Baltic States (Lithuania, Latvia, Estonia)	4*	2	2	6
Russia	7	2		1
Scandinavia (Denmark, Sweden, Finland, Norway)	3	6		5

* The “4” in this field means that 4 interview partners said they had 0-5 contacts in Poland and the Baltic States, 2 said they had 6-15 contacts etc.

The experts' companies have most numerous business contacts with Poland and Baltic States region (mainly Latvia and Lithuania) and Scandinavia - these regions are either target markets (many clients) or there are many suppliers. Consolidated companies also have their owners in Scandinavia and affiliate members of the group in the Scandinavia or the Baltics. Some contacts have been established with Germany.

Least number of contacts is with Russian region because "protected market, no needed quality level suppliers", our company have own sales network, no suppliers there", "minimal contacts due uncertainty (border crossing, cash flows)", "unable to offer same quality as in other regions".

3.2.2 Planned business contacts and projects in the BSR

Table 3 Planned business contacts and projects in the BSR

Number of logistics projects	0-2	3-5	6-10	>10
	5	3		3

In business companies interviewed either there are only few or numerous business projects in BSR. Among support structures only few projects are being planned in the nearest future. The biggest number of projects is planned by logistics services providers due their business peculiarities.

Kind of projects mentioned:

- New operative level clients and suppliers
- Transport and warehousing projects, manufacturing subcontracting
- Pan-Baltic distribution, consignation warehousing, relabeling for local and Finnish market
- Joint sourcing, transports, terminal services, warehousing projects with suppliers and distributors
- Mainly warehousing and integrated logistics projects
- Pan-Baltic DC for Finnish companies
- Logistics services for local branches of international companies
- Initiate cooperation between ICT associations in BSR
- Supply chain management solutions
- E-marketing projects
- Industrial mathematics
- Transportation and infrastructure projects – e.g. role of city transport, transport management, economizing city traffic etc.

3.2.3 Constraints and problems of co-operations in the BSR

By opinion of experts generally there are no significant constraints and problems in cooperation with partners from EU countries. The most often mentioned problem (mentioned by half of interviewed logistics experts) was sometimes supercilious behaviour by big German, Scandinavian and Polish suppliers in relation to local partners. This is

explained by low purchasing power of local companies due to small quantities purchased and therefore their low importance for big suppliers.

Often cooperation partners belong to the same consortium and therefore only cultural differences apply – procedures etc are unified. Latvians are pointed out to be very eager to engage leading position and become a competition instead of cooperation partners.

3 experts mentioned that slow decision making process in Sweden is sometimes a problem. 2 experts pointed out that Estonia is very advanced in ICT field and other countries do not always understand all the opportunities ICT has to offer. Also terminology in English often has different meaning to people from different countries.

The biggest cooperation constraints and problems in BSR are related to Russia. 8 out of 16 interviewed experts mentioned these. These problems concern language barriers, keeping promises, unformed processes and standards, main attention to cost instead of quality, low service quality, difficulties in achieving win-win relationships, border crossing problems, uncertainty, politicised business relations, financial transactions problems (cash payments are preferred by Russian clients), differences in values connected to historical dissenting opinions, everything depending on relations with the “right” people. One expert made interesting point about Russian business culture: there are simultaneously two totally different types of business culture in Russia – old and new generation. Old generation business culture is very bureaucratic, needing a lot of paper filling. New generation culture is modern business culture as everywhere. Experts still point out a gap between Western European business culture and the Russian way of doing things.

3.3 Findings regarding regional developments

3.3.1 Known regional development activities

Surprisingly only 3 of 8 logistics experts interviewed knew some logistics or ICT related regional development activities. The most known activities mentioned by 3 experts are related to development of railways' infrastructure – building up railway border crossing stations in

Russian direction and railways traffic rearrangements in Tallinn area (detour avoiding rail freight movements through Tallinn city).

ICT experts were more informed. 2 out of 8 did not know any activity and one expert declared there are no activities with positive effect. 3 experts (1 private company, 2 support structures) were able to list over 5 activities. E-services (e-government, e-school, e-election, and e-documentation) and M-services ("mobile" as for m-parking, m-ticket, m-payment etc) were more known. Other activities were strongly related to experts' own activities in the organization (unified logistical schemes among affiliate companies, transportation system developments etc).

3.3.2 Key regional development issues

By unanimous opinion of interviewed logistics experts the main key regional development issue of logistics in Estonia is the poor quality of transport infrastructure, particularly road network both inside and outside of cities, not meeting increasing needs. Roads depreciate faster than have repaired. It is also negatively influencing the development of Estonian periphery.

Concerning reasons beside financial one, some experts pointed out low logistics competence level of state and regional authorities. Also the lack of block planning on state and regional level was mentioned, resulting in poor or lacking infrastructure solutions. Sometimes there are unconsidered investments into infrastructure – money is spent because it should be spent within budgetary period.

3 of 8 experts interviewed mentioned the lack of possibilities to use rail transport in domestic distribution (rail-road combination). There is no railway cargo connection between Tallinn and Tartu (two Estonian main economic centres, distance 190 km), also applicable reloading terminals are lacking.

One expert (but most competent in domestic FMCG distribution) mentioned the increasing complexity of domestic distribution to peripheral regions. Due to economical concentration into capital area the demand in periphery is decreasing resulting in smaller distribution volumes and higher logistics cost per unit.

2 of 8 experts pointed out the low level of logistics vocational training, college and academic education.

In the ICT field people would be the key word describing challenges. There is a need for strong leadership and for people who have the will to innovate. Also work force problems are becoming more and more

critical – there are not enough people with qualification and skills. Companies are still not very willing to innovate and invest into innovation.

Another focal point is related to infrastructure. At this moment most of the main channels are owned by former monopoly Elion AS who at this moment is stated to act in a monopoly-similar business environment. State or the municipalities do not own communications infrastructure which is leading to suppressing competition (SMEs) and limited access in the rural areas.

3.3.3 Successful regional development projects

No one of logistics experts interviewed was not able to estimate success of regional developments projects due do lack of information.

According to interviews carried out it seems that entrepreneurship and local authorities are mainly acting in different worlds concerning regional (logistics) development. Entrepreneurs have no information what authorities do; authorities have no information what entrepreneurs need and suppose.

2 of 8 ICT experts estimated success to be 25-50% based on evaluations done by the regional development agencies and own experience. One of the experts pointed out that development is chaotic and lots of money is being wasted due to building double infrastructures. 1 expert was very positive and estimated the success to be over 75%, but projects estimated were implemented inside consortium not publicly.

3.3.4 Strengths and weaknesses of the regions

By opinion of interviewed experts, the strengths and weaknesses in the field of logistics and ICT in Estonia, ranked by number of mentions (in brackets) are presented below.

Region logistics strengths:

- Labour skills and abilities in operating in conditions of limited / unbalanced logistics volumes and lacking economies of scale (small market) (4)
- Favourable geographical location in relation to main suppliers and clients (3)

- Modern solutions (ITC, terminals, etc) – development started only recently, no out of dated solutions (3)
- Good level and professional logistics services (1)
- Openness for new innovative solutions (1)
- Active development of partnerships (1)
- Small, therefore simple and visible logistics systems (1)
- Relatively good logistics infrastructure (1)
- High popularity of logistics field (1)
- Considerable logistics investments into buildings and equipment (1)
- Liberal economic policy (1)
- Stable legislation (1)
- If economic situation is good then logistics business is simple (1)

Region logistics weaknesses:

- Inability to create good relationships with Russia (5). The potential of Russian trade & transit potential has not realized (e.g. repacking Russian import goods arriving into Estonian ports in sea containers into road vehicles, bulk goods repacking. Russian road carriers can not collect Russian import goods from Estonia because of border crossing problems, too strict control of transit goods by local customs compared to neighbour countries, currently one sided transit goods nomenclature, etc.)
- Lacking economies of scale – small market, small partners (3)
- Small attention to long term planning and long term investments (3)
- Labour shortage, including logistics field (1)
- Too labour intensive processes (1)
- Poor road and access roads infrastructure (1)
- Estonian companies do not like make deeper cooperation between each other fearing overtaking their businesses / clients by partners (1)
- Too road hauliers centric approach in developing logistics projects by governmental authorities due to strong road hauliers lobby (1)

Region ICT strengths:

- Willingness to use innovative ICT solutions both in public and private sector (8)
- Well developed ICT infrastructure (including mobile, GPRS solutions, etc) (7)

- Professional, educated ICT personnel (5)
- Modern ICT solutions – development started only recently, no out of dated solutions (3)
- Availability of innovative ICT services providers, competition (3)
- Demanding and innovative clients (2)
- Public support (2)
- Public and private sector are cooperating (2)
- Unified politics and networks, harmonized work process (1)
- Standardized application (1)
- Flexibility and speed in implementing ICT projects (1)
- Relations to “former soviet” for subcontracting (1)
- R&D centres available for exploitation (1)

Region ICT weaknesses:

- Shortage of IT specialists (5)
- Too many not clear standards (4)
- ICT & EDI expectations and needs are higher than local market capabilities and resources (3)
- People know little about the possibilities ICT offers (3)
- No mechanism to coordinate solutions between institutions (2)
- Number of ICT students decreasing (2)
- Little willingness of the companies to invest (2)
- Lacking or insufficient ICT backup systems (1) – critical servers are quite often down – negative impact on ICT systems reliability
- Low attention to long term planning and long term investments (1)
- Use of internet and computers still low compared to Scandinavia (1)
- Companies use little ICT solutions in core processes (1)
- Developing and implementing solutions without understanding the need to change processes (1)
- Non-existing cooperation between companies (1)
- Poor vocational education (1)

3.3.5 The logistics competence level

Table 4 The logistics competence level

	very low	questionable	acceptable	high	very high
of your company/ institution in comparison to leading companies in your branch?			1	4	3
of your region in comparison to other regions in the Baltic Sea Region			5	3	
of the local authorities in the region?		3	5		
of the support agencies in the region?		2	2	3	1

Interviewed experts gave the highest ratings to their own companies' logistics competence level (high / very high with one exception). This is quite logical as experts represent leading companies in their branch.

Lowest ratings were given to region local authorities' competence level (acceptable / questionable). The opinions are very diverse in estimating region support agencies logistics competence level.

Some comments to the ratings:

- **Own company logistics competence level**: "our logistics competence is caused by business peculiarities of international retail chain – partnerships enforce to be up of date in logistics"; "logistics is one of core services, top management has good logistics background"; "able to provide complicated logistics solutions"
- **Region logistics competence level**: "extensive partnerships between local companies. Here are many local branches of international companies – logistics know-how available from there"; "optimal cost / quality ratio"; local logistic level better than in Latvia and Lithuania"; "small complexity of logistics systems and these management – usually only direct activities (transport, warehousing) have understood under logistics".

- **Local authorities logistics competence:** "no arguments, rating is basing on feeling only", "small number of specialists in logistics among officials due to small country size"; "lack of development plans, authorities do not advise with private sector"; "compared to neighbouring countries state listens more private sector and supporting sector opinions. Minimum bureaucracy, only too little care of infrastructure quality", "Estonia is single country where separate ministry of transport does not exist - it is the part of Ministry of Economy and Communication. This arrangement is like Swiss pocket knife – universal but too general for more specific actions".
- **Support agencies logistics competence**: no one expert wished to comment it.

3.3.6 Participation of the interviewed companies in logistics support agencies, networks or initiatives

5 of 7 interviewed logistics sector business companies are participating in logistics support agencies, networks or initiatives. Of them 4 companies are corporate members of local logistics association. 3 companies are members of local wholesalers, freight forwarders or road hauliers associations. 2 companies are participating in local customs development and pilot projects. One company has advised governmental agencies in some business specific matters.

The reason of being member in local logistics association is wish to support development of logistics in region and get information about these developments. Local professional associations represent their members' professional interests in relationships with government, other professional associations and clients.

ICT companies do not participate in such networks as this is not heir core business. Some support structures have one or two projects in the logistics field.

3.3.7 Assessment of local authorities´ support and policy concerning logistics issues

Table 5 Assessment of local authorities support and policy in logistics

very unsatisfied	rather unsatisfied	neither unsatisfied nor satisfied	satisfied	fully satisfied
1	2	5		

No one of interviewed expert was satisfied with local authorities support and policy concerning logistics. Majority is neither unsatisfied nor satisfied, 3 are unsatisfied.

Unsatisfied experts comments: "logistics is not included into governmental development programs (e.g. Interreg)"; "undeveloped vocational training, poor infrastructure quality and transport solutions"; "lack of information about authorities actions. Inability to assure transport infrastructure satisfying local entrepreneurship".

Neutral experts comments: "legislation OK, unsatisfied with infrastructure level", "Main source of dissatisfaction – Estonian Russian border", "Extensive freedom to act, no restrictions by state", "state do not interfere into business but should take more care of infrastructure quality".

Summing up, experts are satisfied with legislation and minimal state interference into business but dissatisfied with infrastructure policy.

3.3.8 Assessment of local authorities´ support and policy concerning ICT issues

Table 6 Assessment of local authorities support and policy in ICT

very unsatisfied	rather unsatisfied	neither unsatisfied nor satisfied	satisfied	fully satisfied
	3	2	7	

Totally 12 experts, 6 logistics and 6 ICT ones answered this question (table 6). All 6 logistics experts were satisfied with local authorities ICT support and policy. Concerning ICT experts only one was satisfied, 2 did not take any strong position and 3 were rather unsatisfied. One ICT expert did not answer this question.

Unsatisfied experts comments: “lack of clear vision”, “cannot see real support; state is promoting monopoly companies, institutions over investing and national software is Microsoft”, “in previous 2 years ICT has been considered not important; direct grants available are not suitable for SMEs”.

Neutral or positive experts’ comments: “lots of attention in developing and implementing different ICT solutions”, “digital signature” and “possibility to communicate with authorities via electronic channels are positive examples”.

3.3.9 Proposals for improvement

3.3.9.1 In experts' companies

Possibilities for improvement of the logistics operations *ranked by number of times mentioned (in brackets):*

- Professional training for better skills (5)
- Setup of new DC for better process organization (4), etc bigger volumes, better handling
- Integration of logistics operations and ICT (3) "Physical movement is not a problem, information availability and visibility in all process phases' needs development in order to enable better analysis and control (e.g. inventory prognosing, sales analysis, vehicle fill rates, etc)"
- Expansion into new markets / increase of business volumes in order to achieve economies of scale (2)
- Better location from logistics point of view (1)
- Increasing labour productivity (more effective working time use (1)
- Open book partnerships with partners (1)

Possibilities for ICT improvement *ranked by number of times mentioned (in brackets)**:***

- ITC training (3)

- ITC systems integration (2)
- Implementation and upgrading of WMS, TMS, track & trace systems (2)
- Quality improvement (2)
- Product development, new solutions (2)
- Unified resource planning platforms
- Client service improvement
- Building infrastructure

3.3.9.2 In local authorities

Possibilities for improvement the logistics:

- Improvement the quality of road infrastructure (5)
- Long term logistics development planning by local authorities (1)
- Local authorities could more consider private sector opinions (1)
- Development of vocational planning system (1)

Possibilities for improvement in ICT:

- Developing infrastructure (3)
- More attention to public backup systems (1)
- Change of data / Privacy Protection Law (1): currently supply chain partners may not share the personal particulars of their private customers resulting in problems in EDI use (1)
- Publishing ICT principles (1)
- Reduce ICT personnel in local authorities by 10 times (1)
- More public services made available on the internet (1)
- Developing public transit and transportation systems (1)

3.3.9.3 In support agencies

Possibilities for improvement in logistics:

- Support agencies could more concentrate in working out different standards and rules (1): e.g. standardization / unification of tare interchange contract, loading and carriage rules, module package standards, packaging standards for general packages, logistics technicalities standards, Ro-Ro rules, etc. Also in ICT unified EDI standards for local inner market.

- Spreading information about modern know-how to their members (1)
- More active participation in governmental development projects (1)
- Active lobby ensuring state investments into infrastructure (1)

Possibilities for improvement in ICT:

- Developing infrastructure (1)

3.3.10 Roles and responsibilities in regional development

The interviewed experts view roles and responsibilities in regional development in very different combinations. It is difficult to make any generalisations. 3 of 15 experts answered this question thought that development activities should be started by public-private partnerships. 2 supposed that obtaining /creating vision should be state initiative but realisation of visions should occur in state-private sector partnerships. Everyone of the rest of 10 experts had their own personal vision.

All expert opinions are represented below.

- Pubic-private partnerships (mentioned by 3 experts, additional comment from one – "ensures that state gets acquainted what is actually needed")
- Obtaining / creating vision should be state initiative. Realisation of visions in state-private sector partnerships (mentioned by 2 experts)
- Initiatives from private sector, state support via legislation, etc. State should have supporting and balancing role in estimating private sector ideas on impartial and state-run level
- Pubic-private partnerships – ensures that state gets acquainted what is actually needed
- Infrastructure matter – public-private partnerships. Other initiatives – companies and associations
- State and associations work out visions. State finances the realisation of visions
- State – care of infrastructure. Other – private sector
- Each regional development project should consist of the following steps: 1. Market signal about certain demand – private sector; 2. Consultations between state, private sector and associations; 3. Surveys – financed by state; 4. Creation of necessary preconditions and investments into infrastructure – state; 5. Investments into superstructure – private sector

- Work should be done in cooperation of all three partners. Have to find common interests and combine them. Initiative could come from any of the parties
- State should initiate these activities. Very often Euro-funding spoils many good ideas and that is why it is easier not to participate at all
- Any development activity is successful when initiated by the companies. Associations can help by developing networks, but states' only role could be financing these activities
- Regional projects should be public-private partnership, but logistics projects should be lead by associations
- Should be associations and partnership projects with wide scope of participants

3.4 Findings regarding education and skills in the regions

3.4.1 Qualification of employees in logistics and ICT

7 logistics experts estimated logistics and ICT qualifications levels in their own company (experts from business companies) and 8 in region (7 business companies + 1 support organisation). In addition 6 ICT experts estimated only ICT competence level in the company and 7 in the region.

Table 7 Logistics and ICT qualification levels in your company

Qualification level in logistics					
	very low	rather low	acceptable	high	very high
blue-collar worker		1	5	1	
white-collar worker			3	4	
management			3	4	
Qualification level in ICT					
	very low	rather low	acceptable	high	very high
blue-collar worker		2	5	3	1
white-collar worker			4	7	2
management		1	4	4	4

Logistics experts assess white collar workers and managers logistics qualifications in their companies high or acceptable. Majority of logistics experts consider the blue collar labour in their companies having acceptable logistics competence level.

ICT skills differ among groups. Blue-collar workers are considered in most cases to have acceptable level of skills. Relative importance of blue-collars' "high" skill may come from the sample group – in ICT companies it is most likely that even the janitor has rather good ICT skills. Same applies to relatively good qualification level of the management as most of ICT SMEs directors are of ICT background. White-collar workers are traditionally with higher education and therefore with at least acceptable, but most likely with high ICT skills.

Concerning the logistics qualifications in the region (Table 8), there are more opinion variations. Prevalently the blue collar worker qualification is estimated rather low, white collar workers acceptable and managers' qualification high.

Table 8 Logistics and ICT qualification levels in the region:

Qualification level in logistics					
	very low	rather low	acceptable	high	very high
blue-collar worker		4	2	2	
white-collar worker		1	4	3	
management		1	2	5	
Qualification level in ICT					
	very low	rather low	acceptable	high	very high
blue-collar worker		7	3	4	1
white-collar worker		2	6	6	1
management	1	2	3	7	2

ICT skills in the region describe blue-collar workers to be on rather low level, but some may be acceptable or high and in rare cases even in very high level. As mentioned before, this wide variation is most likely a result of the specifics of interviewed ICT companies. White-collar workers are either acceptable or high level and management has the widest variation of all skill levels represented with emphasis on high.

As can be seen from Tables 7-8, ICT skills are estimated to have much bigger differences both in own company and in the region, but in overall ICT skills are more advanced than logistical skills.

3.4.2 Expectations for future educational training in logistics and ICT

Professional training is important for all companies interviewed. 3 of 7 logistics companies interviewed operate company own professional training system or prepare it. Also companies support and finance totally or partially employees' initiatives to study and participate in training courses. 3 out of 6 ICT organizations answering this question have own training systems and additional one is cooperating with Tallinn Technical University on this matter.

Specific logistics and ICT professional training needs mentioned by experts:

- Need to introduce new solutions and applications (2)
- Warehouse management for middle level managers
- Training the use of soft wares applied in company

- Customer service
- Technical studies both in high schools and universities
- More engineers and programmers needed, not administrators and maintenance workers
- Supply chain management
- Different document and client management systems

3.5 Findings regarding company expectations

3.5.1 Expectations and wishes for further logistics and ICT development

- Normalization the quality of road network (5 times mentioned)
- Authorities should be able to foresee long term developments and consequences resulting thereof (strategic planning needed) (2)
- Continuing state non-intervention into practical logistics businesses (2)
- Visions and principles of the state made public (2)
- Easier border crossing for goods from Ukraine and Russia (1)
- Should promote, support and buy from own companies, not foreigners entering Estonian market (1)
- Implementation of ICT should be made available to everyone (1)
- State should coordinate and lead more (1)
- More international and EU-funded projects needed (1)
- Need to obtain more information, learning, case studies and experiences from other countries and regions (1)

3.5.2 Policy recommendations

- Less political party centeredness. Decision should be made in long run national perspective instead of proceeding from next elections (2 times mentioned)
- To consider revitalization of railways in Estonia (rails quality, faster connection speeds) (1)

- Reduction of daily lorry traffic in big cities (Tallinn, Pärnu) forcing distribution clients to receive goods at night. Without these restrictions everybody prefers to receive goods at working time (1)
- Governmental authorities should understand the geographical location advantages and possibilities emerging thereof (1). State should take concrete steps for realization this advantage (elimination of infrastructure and transit bottlenecks, continuous improvement for minimization delays in logistics chain (borders)
- More hopes to own instead of Brussels. Local governmental authorities do not believe their own strength (1)
- Separate Ministry of transport instead of joined Ministry of Economy and Communications (1)
- To further develop e-country – basis of future developments (1)
- Develop infrastructure – need for highway-cable between main cities (1)
- Act towards ICT as one of the key sectors also in reality, not only talk about it (1)

4 SUMMARY AND OUTLOOK

This paper represents the views of both logistics and information and communication technologies (ICT) experts in Estonia. From the logistics sector 8 experts were interviewed, 7 from private sector and 1 from support initiative organization. To cover ICT experts' point of view, total of 8 people were interviewed including representatives of local authority, support initiatives, research institution and several private companies.

The local logistics trends most often mentioned by experts are the following, ranked by times mentioned:

- Extensive logistics outsourcing, particularly in transportation
- Tightening cooperation, process integration and development of partnerships between companies
- Increasing focus on warehousing. (warehousing centralization, increasing importance of DC-s location and quality, boom of modern DC-s building)
- Logistics is seen as measure for (labour) costs reduction via developing cooperation and partnerships, reorganisation of transport and warehousing, etc.
- Developing (intermodal) container and trailer transit trade. However Estonia has not been able to realize its geographical location advantages in relation to Russia
- Continuing retail trade concentration resulting in cut of inventory assortments, increase of inventories and increasing role of retailers in supply chains
- Widening implementation and use of bar and matrix codes
- Increasing share of Asian suppliers in sourcing

Most often mentioned ICT trends, ranked by times mentioned:

- Widening use of Web and Internet based solutions
- ICT systems integration
- Transition to tailor-made solutions
- Globalization
- Widening use of VMI solutions
- Active and innovative clients

Local companies must have numerous business contacts with Poland & Baltic Region and Scandinavia in BSR. These regions are

either target markets (many clients), there are many suppliers or owners and consortium partners are situated in those countries. Minimal contacts in BSR are with Russian companies mainly due to uncertainty (border crossings, cash flows, etc.) and cultural differences.

The number of planned new logistics projects in BSR is different in interviewed companies depending in their businesses. 5 of 16 companies interviewed are planning up to 2 projects within next years. 3 companies interviewed will carry out more than 10 logistics projects in the nearest future – 2 of them are logistics service providers which business peculiarities assume extensive cooperation with partners. Intended logistics projects cover mainly warehousing, transport, distribution and integrated logistics projects.

Concerning cooperation constraints and problems in BSR, there are no significant constraints with partners from EC countries, except sometimes supercilious behaviour by big German, Scandinavian and Polish suppliers due to low purchasing power of local companies because of small volumes ordered. Also time consuming decision process in Sweden was mentioned by couple of experts and differences in understanding terminology and possibilities of ICT. The biggest cooperation problems are with Russian partners due uncertainty, overpoliticised business relations and difficulties in achieving win-win relationships, etc.

Surprisingly only small number of logistics experts from private companies knew some logistics or ICT related regional development activities. No one was able to estimate the success of regional development projects due to lack of information. Seems that private sector and local authorities are acting in different worlds: private sector has no information what authorities do; authorities have no information what private sector need and suppose. ICT experts were more informed, could list many ICT activities and evaluated the success to be about average.

By unanimous opinion of interviewed experts the main key regional development issue in logistics is the poor quality of road infrastructure. Also the lacking possibilities for using rail transport in domestic distribution and low level of logistics (vocational training) education system were mentioned.

Region main logistics strengths:

- Labour skills and abilities in operating in conditions of limited / unbalanced logistics volumes and lacking economies of scale
- Favourable geographical location in relation to main suppliers and clients

- Modern solutions (ITC, terminals, etc) – development started only recently, no out of dated solutions

Region main logistics weaknesses:

- The Russian trade & transit potential has not realized due to unsatisfying political relations
- Lack of economies of scale – small market, small partners
- Small attention to long term planning and long term investments

In the ICT field “people” would be the key word describing challenges. Another focal point is related to infrastructure.

- Main ICT strengths in the region:
- Willingness to use innovative ICT solutions both in public and private sector
- Well developed ICT infrastructure
- Professional, educated ICT personnel

Main weaknesses in ICT sector:

- Shortage of IT specialists
- Too many not clear standards
- ICT & EDI expectations and needs are higher than local market capabilities and resources
- People know little about the possibilities ICT offers

The logistics competence level in experts' companies is rated high or very high. Same in the region is rated acceptable or high. Local authorities' logistics competence level is rated acceptable or rather poor.

Majority of logistics experts (5 of 8) assess the local authorities support and policy in logistics issues neutrally – neither unsatisfied nor satisfied. However there were 3 unsatisfied experts, no one was satisfied. Generally experts are satisfied with legislation and minimal state interference into business but dissatisfied with quality of transportation infrastructure.

All logistics experts are unanimously satisfied wit local authorities ICT support and policy, but ICT experts are more unsatisfied than satisfied.

The most effective measures for further improvement of logistics operations in experts' companies are professional training for better skills, setup of new DC for better process organisation, integration of logistics operations and ICT and expansion into new markets or increase of business volumes in order to achieve economies of scale. ICT improvement possibilities are in ICT training, systems integration and developing infrastructure.

Experts assess the blue collar workers logistics and ICT qualification level generally acceptable in their companies. This one for region was rated rather low by majority of experts. Logistics qualification was rated slightly higher than ICT among logistics experts, but vice versa in overall.

White collar workers logistics and ICT qualification deserve more high than acceptable ratings in experts companies and equally acceptable and high ratings in the region.

In total the managers' qualification is estimated rather high than acceptable in experts companies same level as white collar workers qualification. Majority of experts consider managers' logistics and ICT level high in the region. Managers’ ICT qualification was of the highest answering variability of three groups.

The experts' expectations and wishes for further logistics development concern prevailingly road network quality improvement. In ICT field clear visions and further developments are expected.

APPENDIX

Appendix 1 Interview guideline

Structure

Introduction:

Introduction of the interviewer
Short presentation of the LogOn Baltic project and its objectives

Question clusters:

I: Trends (1 question)	*∑min 5 min*
II: Business Connections (3 questions)	*∑min 12 min*
III: Regional Development (9 questions)	*∑min 30 min*
IV: Education/Skills (2 questions)	*∑min 5 min*
V: Outlook (2 questions)	*∑min 8 min*

Interview – Basic information

Interviewer

Name:
Institution:

Interviewee

Name:
Function:
Name of institution:
Type of institution:

- ☐ Manufacturing industry
- ☐ Retail industry
- ☐ Logistics service provider
- ☐ Logistics consultant
- ☐ Local authority
- ☐ Support initiative
- ☐ Research institution

Date, duration and location of interview

Date:
Duration:
Location:

Interview – Questions

I: Trends

I.1.) What do you think are currently the most important trends relevant for logistics and ICT that will influence:

a) your company / institution / organisation?

Logistics:

ICT:

b) your region?

Logistics:

ICT:

II: Business Connections

II.1.) Do you have any business contacts to the Baltic Sea Region? If so, please differentiate among:

Number of contact	0-5	6-15	16-25	>25
Federal Republic of Germany	❑	❑	❑	❑
Poland and Baltic States (Lithuania, Latvia, Estonia)	❑	❑	❑	❑
Russia	❑	❑	❑	❑
Scandinavia (Denmark, Sweden, Finland, Norway)	❑	❑	❑	❑

Why do you have so many / no contacts?

II.2.) Are there any logistic projects planned with new suppliers / customers in the BSR in the next year(s)? *[for industry and research]*

Number of logistics projects	0-2	3-5	6-10	>10
	❑	❑	❑	❑

What kind of projects?

II.2.) Are there any (state-run) cross-national projects planned with local authorities / institutions / companies in the BSR in the next year(s)? *[for local authorities and support agencies]*

Number of cross-national projects	0-2	3-5	6-10	>10
	❑	❑	❑	❑

What kind of projects?

II.3.) When cooperating with partners from Eastern Europe, new EU member countries, Russia, Scandinavia[1] respectively what kind of challenges did emerge?
Please describe inhibitors or possible constraints when dealing with these foreign business partners:

a) concerning the business relations (e.g. intercultural differences, business performance factors, skills of workforce, management skills)
b) concerning institutional setup (e.g. transport and ICT infrastructure, general political conditions, …)

III: Regional Development

III.1.) Do you know of any regional development activities in your region?

III.2.) What are the key regional development issues (e.g. concerning infrastructure, location, training, local support …) for:

a) logistics in your region?
b) ICT in your region?

III.3.) What kind of former regional development projects in your region have been successful?

Number of successful regional development projects	<25%	25-50%	51-75%	>75%
	❑	❑	❑	❑

How did you come to this judgement?

III.4.) In your opinion, what are the strengths and weaknesses in the area of logistics and ICT in your region? What determined your decision to

[1] Eastern European countries, Russia, Scandinavia will add Federal Republic of Germany respectively and cancel their home country.

locate in this region (please refer to special regional logistics competences, locational factors, infrastructural conditions, support programs, skilled workforce …)?

	of Logistics	of ICT
Strengths		
Weaknesses		

III.5.) How do you think is the logistics competence level…

	very low	question-able	accept-able	high	very high
of your company/institution in comparison to leading companies in your branch?	❑	❑	❑	❑	❑
of your region in comparison to other regions in the Baltic Sea Region	❑	❑	❑	❑	❑
of the local authorities in the region?	❑	❑	❑	❑	❑
of the support agencies in the region?	❑	❑	❑	❑	❑

Please comment.

III.6.) Is your company participating in logistics support agencies, networks or initiatives (e.g. for Hamburg Region: Logistics Initiative Hamburg, Süderelbe etc.[2])? Why?

III.7.) How satisfied are you with the local authorities´ support and policy (e.g. for Hamburg[3]: Wirtschaftsbehörde) concerning logistics and ICT issues?

Logistics:

very unsatisfied	rather unsatisfied	neither unsatisfied nor satisfied	satisfied	fully satisfied
❑	❑	❑	❑	❑

Please comment.

[2] please add locally the most important local agencies
[3] please adapt locally

ICT:

very unsatisfied	rather unsatisfied	neither unsatisfied nor satisfied	satisfied	fully satisfied
❑	❑	❑	❑	❑

Please comment.

III.8.) Where do you see room for logistical and ICT improvements?

Improvement	of Logistics	of ICT
a) in your company / organisation		
b) in local authorities		
c) in support agencies		

III.9.) How do you see the different roles and responsibilities for regional development (e.g. who should start development activities: state, pubic-private-partnerships, companies by themselves, associations, etc.)?

IV: Education/Skills

IV.1.) How would you value the employees´ qualification level in logistics / ICT

a) in your company?

Qualification level in logistics					
	very low	rather low	acceptable	high	very high
blue-collar worker	❑	❑	❑	❑	❑
white-collar worker	❑	❑	❑	❑	❑
management	❑	❑	❑	❑	❑
Qualification level in ICT					
	very low	rather low	acceptable	high	very high
blue-collar worker	❑	❑	❑	❑	❑
white-collar worker	❑	❑	❑	❑	❑
management	❑	❑	❑	❑	❑

b) in the region?

Qualification level in logistics					
	very low	rather low	acceptable	high	very high
blue-collar worker	❑	❑	❑	❑	❑
white-collar worker	❑	❑	❑	❑	❑
management	❑	❑	❑	❑	❑
Qualification level in ICT					
	very low	rather low	acceptable	high	very high
blue-collar worker	❑	❑	❑	❑	❑
white-collar worker	❑	❑	❑	❑	❑
management	❑	❑	❑	❑	❑

Please provide some background information on the professional qualification of your employees.

IV.2.) What educational training do you expect to be relevant in the future and how do you support further education and training in the area of logistics and ICT?

V: Outlook

V.1.) What are your expectations and wishes for further logistics and ICT development (from local authorities, support agencies…)?

V.2.) Do you have any concrete policy recommendations in the area of logistics / ICT?

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

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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
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11:2007 REGIONAL DEVELOPMENT IN MECKLENBURG-VORPOMMERN, GERMANY - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT
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12:2007 REGIONAL DEVELOPMENT IN ESTONIA - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT
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13:2007 REGIONAL DEVELOPMENT IN SOUTHWEST FINLAND - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT
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14:2007 REGIONAL DEVELOPMENT IN LATVIA - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT
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15:2007 REGIONAL DEVELOPMENT IN LITHUANIA - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT
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16:2007 REGIONAL DEVELOPMENT IN POMERANIA, POLAND (THE POMORSKIE VOIVODESHIP) - Development Measure Impact Analysis (DEMIA) on regional development related to logistics and ICT
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25:2007 ICT SURVEY IN SOUTHWEST FINLAND
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