1. LOGISTICAL TRENDS IN THE BALTIC SEA REGION

In the situation where a large increase in trade and freight transport volumes in the Baltic Sea region (BSR) is expected and in which the BSR is facing a major economic restructuring, efforts to achieve more integrated and sustainable transport and communication links within the BSR are needed. One of these efforts is the development of logistics centres (LCs) and their networking, which will continue to have an impact on improving communication links, spatial planning practices and approaches, logistics chain development and the promotion of sustainable transport modes.

The importance of logistics systems as a whole is not seen clearly enough. Logistics actors see that logistics operations are not appreciated as much as other fields of activity. In addition, logistics centres and the importance of logistics activities to the business life of areas and the employment rate should be brought up better.

In general, the planning process is seen to be too slow from both the logistics actors’ and spatial planners’ point of view. Obviously the procedure differs in each country as well as the time needed to proceed. Other barriers concerning LCs establishment and development could be concluded in four areas: support form the public sector, public-private partnership, financing and realisation.

These factors will reflect on logistics processes both in major gateway cities and in remote BSR areas (Perälä, 2004).

The main logistical trends in the last decades are seen in (Baltic Maritime Outlook, 2006):

- **Restructuring of logistical systems** by spatial concentration of production; through reduction in plant numbers, or increased plant specialisation ('focused production'), spatial concentration of inventory
- **Realignment of supply chains** by wider geographical sourcing of supplies, wider distribution of finished products and concentration of international trade to hub ports.
- **Rescheduling of product flow** by adoption of Quick Response and Efficient Consumer Response in retail distribution and concentration of international trade to hub ports.
- **Changes in management of transport resources** by improvement in transport’s relative cost/performance, increased use of outside transport / distribution contractors, changes in vehicle size regulations and in handling systems and combination of transport modes towards intermodal transport chains.
• Changes in product configuration/design by increase in complexity and sophistication of product.

In the BSR there is a considerable number of activities which are branded as logistic centres. Not all of them are directly linked to ports. The development of logistic centres in the vicinity of ports in Estonia, Lithuania and Latvia are intended more towards the creation of business zones, to attract all kinds of companies to these areas – not only logistic companies.

The general political aim of regional economic development is often the driving force behind the creation of logistic centres.

2. ROLE AND PLACE OF LOGISTICS CENTRES IN THE LATVIAN NATIONAL TRANSPORT POLICY

The section includes summary of interviews of transport policy makers, logistics operators, spatial planners in Latvia about the spatial planning need of logistics centres and about the state of co-operation between logistics operators and spatial planners in this question.

The main goal of interviews – identification vision of different actors (Fig.1) involved in the process of planning and development of LC on real state and possible decisions in this area.

![Diagram of Actors of interview](image-url)

Figure 1. Actors of interview

The long-term objective of the Latvian transport development policy is to create an effective, safe, competitive, environmentally friendly, balanced and...
multi-modal transport system, which is fully integrated in the European transport system, and satisfies economic and social needs of Latvia for passenger and cargo transportation in domestic and international traffic.

The main directions of Latvian transport policy development are identified in the National Programme for Transport Development 1996-2010.

The improvement of the quality of the transport system is one of the main pre-conditions for re-industrialisation and for the development of an innovative economy in Latvia, since it encourages regional development and improves the competitiveness of Latvian companies at the European and international market.

The development of freight terminals and warehouses should be promoted at crossings of transport corridors. In this process the development of logistics is of high importance. As a rule freight distribution centres are developing as joint ventures of private and respective municipal companies.

In the future it is planned to set up freight distribution centres in Riga, Ventspils, Liepaja, Rezekne, Daugavpils and at other principal transport junctions (Fig. 2).

It is regarded that one of the most important issues for peripheral regions development is the development of logistics and distribution centres focused on attracting freight from Asia and the Far East. Latvia can serve as a distribution centre for cargo from Asian countries (e.g. China, Korea) not only in the Baltic States but also with equally successful results in Russia and the CIS countries. But today the idea of logistics centre is at early stage of development in Latvia.
2.1. GENERAL VISION

1. State spatial planners have not vision on development of logistics centres.

2. Seaport city-regions are key nodes in the global logistics freight transportation network. The maritime activities exploited at the seaport location may promote the regional economic growth of the surrounding because of the circular and cumulative causation a central place is capable to give origin to. The most appropriate regions for logistics centres development are ports of Riga, Ventspils and Liepaja.

3. Transport policymakers and logistics operators both stress the necessity to build up an efficient transportation system by promoting the inter-modality patterns through the establishment of distribution and inter-modal centres. The seaport city-region should promote the settlement of such public logistics terminals at the local level in order to promote the local entrepreneurship, as well as to reduce the environmental impact of the freight transport within the urban area. The building of the inland logistics terminal at the more far hinterland locations should increase in efficiency the whole transport system because of the promotion of the inter-modality.

4. The three main goals of co-operation between actors are supposed to achieve can be summarised as following: 1) to establish a more efficient logistics system; 2) to facilitate the implementation of advanced information systems; 3) to promote co-operative freight systems.

5. The LC has to be seen as a meeting point for both public and private logistics operators. The consolidation of the urban logistics activities can be realised at this freight transport node of the transportation network by the application of the most advanced information systems.

6. An efficient co-operative freight transportation system can be implemented at the LC location. This co-operative system enables a large number of shippers or freight carriers to share a jointly freight vehicles system, jointly terminals, as well as common information systems in order to exploit the synergy effects the spatial agglomeration of the logistics operations spread out.

7. The individual economic agent should be able to reduce the costs for collecting and delivering goods due to the exploitation of the economics of space at the LC. The spatial agglomeration enables the co-operative performance of the logistics operations jointly with other entrepreneurs, as well as the supply to the customer of a level of services of better quality.

8. Through the establishment of a spatial multi-function cluster the entrepreneurship in the logistics transport sector may be promoted, and at the same time the negative externalities generated by the road transport modality may be reduced.

9. The establishment of public logistics terminals in the area surrounding a seaport city can be helpful for promoting the co-operative freight transport systems.

10. The general vision of different actors at the problem of logistics centres development is shown in the Table 1.
### Table 1. The general vision of different actors at the problem of LC development

<table>
<thead>
<tr>
<th>Actors of interview</th>
<th>Relation to idea of logistics centre development</th>
<th>General problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>State level of spatial planning (Ministry of Regional Development and Local Government)</td>
<td>Have not vision on development of logistics centres.</td>
<td>- No special legislation and regulations of LC. &lt;br&gt;- No special rules for land use needs. &lt;br&gt;- No principles of cooperation between stakeholders of LC. &lt;br&gt;- No methodological and practical approach for LC establishment. &lt;br&gt;- No cooperation between state level of transport policymakers and regional level of spatial planners. &lt;br&gt;- No practical experience in pilot project of design and development of LC. &lt;br&gt;- Transport transit much more outnumber of distribution at the state level.</td>
</tr>
<tr>
<td>Transport policymakers (Ministry of Transport and Communications)</td>
<td>There is a sensation of necessity of creation of the logistics centres, but there is no practical programme of their development.</td>
<td></td>
</tr>
<tr>
<td>Regional level of spatial planning (Riga and Daugavpils City – two largest cities of Latvia)</td>
<td>There is a desire of creation of the logistics centres, but know-how of their design and the practical programme of their development are absent.</td>
<td></td>
</tr>
<tr>
<td>Transport and logistics operators (Transport and logistics companies)</td>
<td>There is a need of creation of the logistics centres, but is absent know-how their creations. The mutual competition and mistrust of transport operators to each other essentially interferes with the decision of practical questions of LC creation.</td>
<td></td>
</tr>
<tr>
<td>Transport and logistics research and education establishments</td>
<td>There is a sensation of necessity of creation of the logistics centres; there is a general vision on development of logistics centres. There is no demand from the other actors.</td>
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</table>
2.2. THE MAIN PROBLEMS OF THE LOGISTICS CENTRES DEVELOPMENT

There are two main problems in the development of LC:

- the optimal geographical location and
- the optimal spatial physical size of the LC.

The location choice among different potential sites has to evaluate the trade-off between transportation cost and facility cost. The facility cost is defined by the sum of the construction, maintenance, land and truck operation costs at the LC site.

The land price plays a major role when the potential nodal location is settled nearby the urban agglomeration. In this case, the lower transport costs the logistic operators had to bear for the pick-up/delivery activities between the LC and the urban centres might compensate in such a way the more expensive fixed investments necessary to bin the land, as well as for building the infrastructure.

The public planner should have the role to perform a macroeconomic decision about the more suitable geographical location and dimension of the LC. His aim is to minimise the total cost of the LC. It follows that the accessibility patterns are absolutely relevant.

The public planner has no influence at the microeconomic level of decision, when the distribution and assignment of the freight traffic is considered.

At a micro level, where the individual transport operator decides to use his own freight vehicle, the choice of making a stopping call at a certain LC rather than another is supposed to be determined by the behaviour of the single transport operator or company. At this level of choice the goal is to minimise the transport costs.

<table>
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<th>PPP</th>
<th>LC</th>
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<td>Public</td>
<td>Private</td>
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<td>Benefit of LC for public sector</td>
<td>Benefit of LC for private sector</td>
</tr>
<tr>
<td>State and local budget</td>
<td>Private investment</td>
</tr>
<tr>
<td>State, Local government</td>
<td>SME, Large companies</td>
</tr>
<tr>
<td>Donor Agencies</td>
<td>Transparency in the technology of PPP project establishment and management</td>
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<td>PPP projects: preparation, principle of selection, management, monitoring, maintenance, operation, ownership</td>
<td>Role and mission of advisors and experts, Education and Training</td>
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Figure 3. The main tasks for creation of LC
2.3. ADVANCED INFORMATION SYSTEMS

The improvement of advanced information systems is one of the most relevant instruments in order to achieve the rationalisation in the logistics activity. Planning in advance the routing and scheduling of the consignments may effectively improve the efficiency in the transport system.

The most important findings beyond the particular ease are as follows:

- Large customers (shippers) require logistics partners (forwarders) to either accept paper input (primarily fax) or to subscribe to customer's choice of technology. Such customers are unlikely to reimburse their partners for related effort, the implementation thus have to bear sufficient saving potential for the forwarder;
- EDI data transmission and the relating process automation provide the basis for improvements of transport planning and execution.
- Port community systems provide the technical, managerial and business background to implement EDI systems;
- Linking only one additional exporter or importer in the hinterland may have very significant multiplication effects. The company may communicate with additional partners in the same and in other ports. Likewise the resident logistics partner has been enabled to also communicate with other hinterland partners;
- A success factor is the usage of standardised communication and messages. In transport EDIFACT has the largest user base.

Computer based information systems in transportation chains have several advantages:

- Increased management options through tracking and tracing and improved quality control of own services and those of subcontractors;
- Outsourcing of transport services, but staying in control of logistics performance;
- Increased production-to-order orientation and better transparency of market demand and supply.

2.4. PROJECT “MULTIMODAL VIRTUAL LOGISTIC CENTRE”

The overall objective of the “Multimodal Virtual Logistic Centre” (MVLC) is to create a virtual single point of entry to the telematics services relating to all modes of transport with Latvian neighbouring countries (Fig. 4).

The MVLC system will improve the integration of ports and railway into intermodal transport chains. The main goals within the realisation of the MVLC system are the following (Kabashkin, 2006):

- to harmonise administrative procedures and make them easily usable throughout Latvia (e.g. by unifying the interfaces between shipping agents and ports),
• to establish a “virtual entry point” service for information in the port with a common interface – no matter of the organizational partners behind, e.g. port operator, stevedore, port authority, harbour master, port community systems, etc,

• to make available information supporting the operation of the whole intermodal chain accessible to (all) other partners in the chain; depending on their level of computerisation this can be done via a combination of EDI and Web-based services.

This confirms that MVLC is should not be thought as a system but a continuous process of moving forward.

This progress should start from creating basic facilitating services (EDI based) in short term thus creating the base for more valued products and applications.

The activities presented in the project are oriented on specifying the new transport concept and making the implementation plan for the new system to act as a “virtual logistics service center” in the region and providing state-of-the art products and services to the transportation industry and its clients.

It is not possible to gain results in the whole area of port community telematics in short future so the principle of piloting has been accepted in MVLC. This means that a few most urgent areas have been identified as pilots for further studies or implementations.

These areas and pilot proposals are:
change of processes in two potential bottleneck areas of border crossing and railway co-operation including electronic exchange of cargo information. This will serve mainly the transit operations by rail.

- establishment of a messaging service operation to facilitate the necessary messaging between parties.
- The idea of intermodal portal will serve as an Internet based application providing marketing information of logistics, links to main services, operational links such as booking and many others.

The initial investment for all proposed projects will be used for:

- external work and consulting,
- establishment of a messaging EDI centre with all hardware and software components,
- definition of new process models in customs and railways concerning mainly border-crossing,
- construction of the first phase Intermodal Portal system.

The objective of project is to realise the special technologies, which are already known but not in use on the corridor yet. The aim is to find out technologies or organizational aspects, which help to strengthen the competitiveness of the alternative traffic modes on the described corridor. The overall goal of project is to ensure competitiveness of European logistics by investing to the infrastructure and supporting services including information technology.
2.5. THE NATIONAL LEVEL

At the national level, the programme of LC creation is a powerful instrument of transport integration and co-ordination.

The logistics companies look for a central location as basis for their logistics activities directed to their international clients, as well as a departure site in order to enlarge their commercial relationships. A relevant role is played by the technological changing in the loading/discharge operations, as well as the increasing availability of space within the neglected old port areas. At these locations, the logistics service companies may find an interesting supply of space to turn into their activities.

From a functional point of view the three Latvian main ports are involved in an international maritime competition. A complementary set of functions should be promoted at each seaport site in order to lead to a better integration in the transportation chain, as well as in the road and rail links between the three seaports.

In fact, the transport links from the seaport site towards the hinterland have to perform an increasing efficiency in order to attract the shipping companies, and moreover the specialist total logistics provider.

All actors stress the necessity to build up an efficient transportation system by promoting the intermodality patterns through the establishment of distribution and inter-modal centres. The seaport city-region should promote the settlement of such public logistics terminals at the local level in order to promote the local entrepreneurship, as well as to reduce the environmental impact of the freight transport within the urban area. The building of the inland logistics terminal at the more far hinterland locations should increase in efficiency the whole transport system because of the promotion of the intermodality.

Many different and interdependent factors usually influence the location choice of an economic agent. Few decisional patterns may not be spatially relocated such as the transport infrastructure, the urban settlement, or the environment. Others are more flexible and may be subject to spatial relocation, e.g., the skilled labour force, the research centres, etc.

The accessibility to a seaport site is therefore strictly dependent on the optimal combination of all these elements. A seaport region might be consequently more or less attractive to the establishment of an economic activity or to the foreign investments in order to exploit its own local development potential.

In order to support the overall LC objectives a close co-operation with similar projects and programmes must be established:

- to strengthen the integration of spatial planning and regional transport development and develop a common regional approach to the issue of sustainable logistics solutions,
- to promote the use of transport corridors, modes and technologies which support a sustainable regional development providing the
economic and social development of the regions in the south-east part of the Baltic. The trans-national co-operation aims at assessing trade and transport potentials and develops environmentally friendly transport solutions.

2.6. FRAMEWORK FOR REGIONAL ACTION

As it has been analysed it would be inadequate to recommend "one best way" for spatial planning within the context of port related interaction in general and in BSR in particular. The main reasons to be careful with strong recommendations may be summarised as follows:

1. The spatiality of transport and logistics activities has evolved from clearly delimited port areas to functional port regions and to port networks more recently. The functional interdependencies, creating the network, may consist on sequential relations (output of one node is the input for another, e.g., relation between port and in kind container depot), reciprocal relations (actors are using each others output) and pooled relations (use of common resources). The term network suggests that these interdependencies may not be territorial and that modern port related activities have a strong tendency towards decentralisation.

2. The trend of a spatial decentralisation of port related transport chains is accompanied by attempts of the main actors involved to achieve control over the segments of the chains. Though it is not clear whether one actor will be the most influential one in the future, the entrepreneurial strategic are not predictable in relation to their spatial outcome. But it is rather obvious that the crucial factor within the transport chain will be the customer orientation while the transport space will be organized as flexible as possible. This interpretation supports decentralized hub and concepts with, "footless" or shifting nodes. Based on some standardized norms the question of appropriate IT support will depend on the dominant position of an actor within the transport chain. Or to put it in other words: the inventions and early adaptation of new IT depends on the necessities to optimise integrated transport and logistics chains and the economic power of private actor constellations.

Following these lines of argumentation the existing ports have to deal with territorial decentralisation of transport and logistics activities and tendencies of economic centralization of private actors involved. Therefore the frames of independent action become more and more narrow. In more general terms, existing ports do not only have to create and sustain competitive infrastructure including IT but have to be prepared to offer far reaching services for foreign trade, transport and communication in order to be able to react as flexible as possible to new challenges. Beside an effective node of physical interchange successful ports will become LC regions for transport and communication offering systemic knowledge for integrated transport and logistics chains.

Faced with the imminent enlargement of the European Union and the integration of Latvia as well as further states of the Baltic Sea Region a general strategy of the modernization of the maritime infrastructure is to be
recommended including IT. The expected increases of transport will not be manageable country-sided in spite of great infrastructure projects like Via Baltica. The expansion and improvement of sea-based mobility of goods and supporting infrastructures should be emphasized in initiatives of spatial planning within the Baltic Sea Region.

According to opinion of the actors involved, both growths are important as quantitative so as qualitative. The new demands of the information society and the "New Economy" on the transport and logistics sector, make it necessary to increase the "know how" as quickly as possible in the field of IT, and develop information systems with which the logistics chain can be controlled and checked. IT departments of individual companies are no longer able manage such a task, so that big actors (e.g., the Latvian Association of Railway International Electronic Documents Circulation Operators) buy up software enterprises throughout the world that develop information systems for the transport and logistics sector, or will be able to do so in the future. All actors participating in the transportation chain are convinced that the future leader of the information system will also dominate the material transportation chain and thereby gain the largest part of the increased value created by transportation. Furthermore, the evolution of such technologies is extremely capital-intensive: markets, which are becoming more and more transparent, involve ever-increasing costs for marketing and distribution. Smaller enterprises, endowed with a more limited capital, are no longer able to make the investments necessary to remain competitive.

2.7. THE CITY LOGISTICS SPATIAL IMPACT

Inside the port area of Riga, mainly trucks operate the freight movements from a terminal to another. Also road carriers mainly make the distribution of goods towards the metropolitan region. The explanation is given by the higher efficiency of this transport modality on the short distances both in terms of time and of transport flexibility. But the negative externalities in terms of congestion and pollution are social costs, which have absolutely to be taken in account.

The distribution centres play a remarkable role not only from an economic point of view because of the higher efficiency and optimisation in the transport chain they realise, hence the distribution and transport costs are reduced: but also from an ecological point of view because of loosening of the traffic intensity and therefore of the polluting emissions from the motor vehicles.

Early in history Riga developed as a transit centre between the ports of Western Europe and the Russian hinterland. Riga enjoyed continuous growth as a merchant port. Today Riga is the main administrative, financial, industrial and transportation centre in Latvia. Embassies and consulates, a significant number of international organizations, who work in the Baltic States, have their headquarters located in Riga. Riga is also a significant financial centre in the Baltic region.
As other cities Riga did not have specific strategies and theme plans concerning "urban networks and logistics centres".

3. CONCLUSIONS AND RECOMMENDATIONS

As discussed earlier in this paper, it is important to remember the market forces, even when discussing the development of sustainable transport solutions from a spatial planning perspective. The demand for freight transport services is generated and formulated by individual entrepreneurs and private companies, which operate on highly competitive markets. This obviously limits the possibilities to guide the development in a specific geographical area. It puts high demands on planning to be flexible and on the foresight of the planners. On the other hand good public infrastructure, e.g. the road system, also helps to attract business and to improve efficiency.

In this context it might be worthwhile to question the benefit of transit traffic; through the port, the city or the region. The issue was raised in relation to the Russian transit traffic, but is also valid elsewhere. Investment needs and environmental impacts have to be assessed in relation to job opportunities and revenues against an appraisal of the stability of the traffic. Transit transport might help to develop new and highly needed services and skills, but it might also deviate resources better used elsewhere and might create e.g. environmental damages difficult to repair.

Co-operation between the parties in a transport chain, between ports, regions and authorities can give concrete improvements to everyday practical problems and thus contribute to the goals of cohesion and economic development in the BSR. The results have been achieved in a highly competitive environment and indicate that there are areas for co-operation, which do not distort competition, but promote a sustainable transport system to the benefit for the society as well as the private players. Such areas are the following:

- Promotion of the use of IT among the port community and between the port and the world outside.
- Introducing IT in the business process is a complex issue affecting internal and external procedures, core business ideas and market positions. Building efficient IT relations between authorities and private organisations requires special attention. E-business development suggests that Internet will speed up the reorganisation of commercial relations and market behaviour. Apart from infrastructure, companies need some basic agreements on standards. The public sector on a national, regional or local level can act as a catalyst in this process.
- Co-operation between customs and other authorities in specific transport corridors
- Goodwill and mutual trust is a good basis for solving practical problems within an existing regulatory framework. Regional authorities along a transport corridor sector can together create the platform for such facilitation work. They can bring in all parties and
moderate the work of creating a common understanding of the problem and hopefully also have finding a practical solution.

- Regional co-operation between public bodies and private companies in order to understand spatial needs based on the assessment of long term commercial trends for waterborne transport and other factors affecting future transport demand.

- Implementing new networks between transport companies, scientific organisations and port cities.

It is not surprising, that logistics centres tend to be located near the transport corridors. Access to all transport modes is vital for the success of logistics centres. The closeness to ports and sea transportation is natural for establishing a logistics centre in Latvia.

Based on corridor analysis, it seems there are many possibilities for new logistics centres:

- the railway hubs in Rezekne, Daugavpils and Jelgava,
- the important port cities of Riga, Ventspils and Liepaja.

The success of these ports and logistics development projects depends strongly on the development of transit traffic.

Using waterborne transport implies to also use other modes. This means that integrated transport concepts must be developed providing efficient interfaces between transportation means, organisations and authorities. Computer based communication and information systems must be used to provide the necessary management and business support.

The harbour will form a core area in a wider concept of activities in the adjacent area of the city. Such activities might be many kinds of international, national and local commercial activities, logistic firms, consulting and transport services etc. Together with the harbour itself, this will form a logistic centre in the region as well as a transport hub (multimodal centre).

Bibliography

