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TRANSPORTATION AND LOGISTICS NETWORKS IN THE BALTIC STATES: KEYS FOR SUCCESSFUL ECONOMIC DEVELOPMENT AND INTEGRATION INTO THE E.U.

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This paper aims at reviewing the current state of transport infrastructure in the Baltic States, listing – their main developments and challenges. The interest in the Baltic states originates from two distinct perspectives: their importance as a new market within the EU and their transit function for trade with Russia. Combining these views leads to forecasts of raising trade volumes that the transport infrastructure in the Baltic states must consider. Recent developments, however, point to another direction. In essence, it is questioned how long the Baltic States will be able to function as a gateway for other EU member states to the Russian market. The paper therefore discusses new logistics trends, mainly focusing on the importance of supply chain management (SCM) and a supply chain orientation in providing future opportunities for the transport sector and logistics service providers in the Baltic states.

Keywords: *transportation, logistics networks, economic development, integration, Baltic states*

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Introduction

Some economies in transition (or Simchi-Levi et al., 2003: emerging economies) have become increasingly important to international companies due to their geopolitical status, low labor cost, potential growth in their markets, etc. (Ülengin and Uray, 1999). They are cha-

racterized by the move from a less developed state towards a "well-established" economy. In the Baltics, recent political developments, i.e. the enlargement of the European Union (EU) account for the main factor triggering a renewed economic interest. Several authors have pinpointed the tight relationship between the development of a solid logistics infrastructure and the competitiveness of a region, relating the latter to its ability to attract foreign direct investment (Goh and Ang, 2000) or to the development of trade and customer service levels through the development of logistics activities (Ülengin and Uray, 1999).

It is important to realize, however, that there are significant differences between the logistics systems of developing and developed countries in terms of the quality and productivity of logistics operations, the quality of infrastructure, the modal split as well as the problems and challenges confronted (Persson and Bäckman, 1993; Ülengin and Uray, 1999). Furthermore, regional technical impediments such as differences in railway track gauges and signal systems preclude developments in other areas such as the US (Lewis et al., 2001; Sankaran, 2000). This makes the benchmarking of logistics practices in economies in transition to developed countries (see, e.g., Carranza et al., 2002) largely obsolete, because the specialties of a region can lead to innovative solutions unthinkable in other regions (Sankaran, 2000), which counterbalance differences that may appear on the surface as a mere economic benchmarking. Furthermore, Bookbinder and Tan (2003) repudiate the categorization of "First World" countries as "developed" in terms of their logistics systems. Thus, while comparisons are important in order to realize similarities and, importantly, differences in the preconditions of logistics development, the literature on logistics in economies in transition has established the practice to describe a country (see, e.g., Jiang and Prater, 2002; Peng and Vellenga, 1993; Rydzkowski, 1993; Sankaran, 2000; Ülengin and Uray, 1999; Waters, 1999) or a region (see, e.g., Goh and Ang, 2000; Persson and Bäckman, 1993) as a unique case. But while the literature on some economies in transition is abundant, others are largely neglected. Such are the three Baltic States, Estonia, Latvia and Lithuania, which received recent attention from the World Bank (see Queiroz, 2003 and Ojala et al., 2004). Up to date logistics literature on countries of the Former Soviet Union (FSU) is scant, and authors who deal with this topic usually concentrate only on Russia (see Bookbinder and Tan, 2003), with singular exceptions (such as Jauernig and Roe, 2001; Laurila, 2003).

In any case, the key challenge for logistics development in economies in transition is infrastructure-related (Goh and Ang, 2000). Therefore, this paper aims at reviewing the current state of (non-military) transport infrastructure in the Baltic States, listing its main developments and challenges. In addition, the paper discusses the importance of supply chain management (SCM) and a supply chain orientation in providing future **opportunities for the transport sector and logistics service providers in the Baltic States**. Several issues make the Baltic States especially interesting from a logistics perspective: the enlargement of the EU leads to an increase in trade between the Baltic States and other EU member states; while the Baltic States maintain their gateway function for large raw material markets further east in the FSU (Jauernig and Roe, 2001).

The paper begins by reviewing the current state of the transport infrastructure of the Baltic States. Thereafter the relationship between economic development and transport infrastructure is discussed, continuing with the re-

cent geopolitical developments in the Baltic area. The paper then discusses recent logistics trends, focusing on the concepts of SCM and SCO. Finally, a short discussion of the main findings of the paper and implications for the transport sector and logistics service providers concludes the paper.

The Transport Infrastructure of the Baltic States

Sankaran (2000) lists structural, regulatory and developmental factors as crucial for freight logistics. Among the structural factors are population density and topography, climate, the distribution of natural resources, the dominance of city areas, market densities and geographical isolation. Regulatory factors include the governmental regulation of the transportation sector, trade relationships and unions, and developmental factors refer to changes induced by ongoing economic and technological developments.

Many regions in the Baltic States are scarcely populated (Ojala et al., 2004). A total population of 7.21 million people live in 175 128 km², with population density varying among the three countries (EU, 2004). This population is, however, concentrated around major cities; more than one third of the population in each country lives in and around its capital (EU, 2004). Therefore, the capitals Tallinn, Riga and Vilnius dominate the trade structure in the country along with some other city areas such as Kaunas and Klaipėda in Lithuania (Ojala et al., 2004). The three countries are also similar to each other on topographical accounts. They consist mainly of gentle plains and forests (EU, 2004). Thus, they do not contain major topographical obstacles for transport infrastructure such as abundance of lakes or mountainous areas. They have a temperately continental climate, with long warm days in the summer but harsh winters. The ice situation is a major issue for maritime transportation.

In many ways, the Baltic States can be seen as a separate island from the rest of the EU. North-South road connections are to be built, but the obligatory bypass of Kaliningrad affects the Via Baltica. Rail connections are not possible to the EU due to differences in track gauges as a technical impediment (Ojala et al., 2004). Therefore, maritime transportation will gain in importance for the Baltic States.

Regulators have a variety of tools for influencing transport development. The most common tool for changing from a centrally planned to a market economy in CEE countries is privatization (Persson and Bäckman, 1993). This goes for transport companies but also for innovative solutions to find financing for infrastructure projects (Queiroz, 2003). The financial assessment TINA (Transport Infrastructure Needs Assessment) estimates the investments needed in the Baltics around 0.6 billion € in Estonia, 2.0 billion € in Latvia and 2.7 billion € in Lithuania (Eberling et al., 1999 in Lewis et al., 2001). The following sections review how the infrastructure for different transportation modes needs to be revised in the Baltic States.

The assumption is that the unit cost of transportation varies between different modes. The steepness of cost curves reflects volume movements, freight handling charges, the speed of transportation, and costs of switching modes in intermodal transportation. Alternative modes of transportation also change the mileage for the chosen transportation route and are related to various risks that affect transport insurance fees (Banomyong and Beresford, 2001).

Road transport accounts for 75% of freight movements in the EU (Gentry et al., 1995). It

is predicted to increase significantly (European Commission, 2001), although political measures attempt to promote alternative transportation modes (Gentry et al., 1995) for reasons of traffic congestion and environmental standards (Lewis et al., 2001). The intra-EU road transport suffers as any other transportation mode from the consequences of national regulations leading to differing standards for truck sizes and weights(Gentry et al., 1995). The harmonization of these standards is progressing slowly throughout the EU.

The density of road networks in the Baltic States is at the lowest level in the European Union, comparable with regions such as Northern Sweden and Southern Portugal (European Commission, 2003). Though road transport has not been as prominent in the Baltic States as in other EU member states so far, all indicators point towards its heavy increase (Persson and Bäckman, 1993). Road transport can adapt more readily than other modes of transportation to new demand, especially in economies in transition (Persson and Bäckman, 1993). Road transportation can develop even if the infrastructure is lagging behind. Unfortunately, side-effects of this situation are a decreasing road safety: Latvia and Lithuania rank among the countries with the highest number of fatalities in road accidents (Economist, 2003a: European Commission, 2003).

The European Union is increasingly aware of the problems concerning the transport infrastructure of the Baltics. Much of the 220 billion € for new transportation and communication projects is spent here (Economist, 2003a). The main construction project is Via Baltica, connecting the Baltic capitals with Poland. After the abolishment of customs clearances within the EU, the current state of the road network is the sole impediment to freight traffic on roads (Ojala et al., 2004).

In a free market economy, manufacturers, wholesalers and retailers are supposed to provide goods that are demanded (Peng and Vellenga, 1993). Restructuring trucking services in economies of transition struggle with the following points: the difficult financial situation of domestic companies, limited experience of management (see also Goh and Ang, 2000; Persson and Bäckman, 1993), unsettled legal status of stationary property, and a sharp decline in state-owned enterprises (Rydzkowski, 1993).

Rail Baltica is the main construction project concerning rail transportation in the Baltics. It affects the two transport corridors of the EU that will run through the Baltics, corridor I (Helsinki–Gdansk/Warsaw) and corridor IX Helsinki / Klaipėda / Kaliningrad – Moscow / Odessa / Alexandroupolis (Eberling et al., 1999 in Lewis et al., 2001). The construction of this rail connection from Tallinn to Riga, Vilnius / Kaunas and further south to Poland will start in 2008 after first harmonization requirements have been met (Ojala et al., 2004). The first hurdles are to harmonize the differences in standards and requirements for rolling stock, locomotives, signaling, information systems (Lewis et al,. 2001) and track gauges (Ojala et al., 2004; Sankaran, 2000). Railway links are classified according to the number of tracks (one or more) and whether they are electrified (European Commission, 2003). The EU focuses strongly on the Baltic North–South corridor because of it being an alternative route to the congested N–S traffic mainly through Germany (Lewis et al., 2001).

Rail transport is commonly seen as more environmentally friendly than road transportation. The EU has therefore decided to encourage a modal shift from road to rail (Lewis et al., 2001). At the same time, the rail share of the EU freight market declined from 32%

in 1970 to 12% in 1999 (Lewis et al., 2001). The same development is to be seen in the Baltic States (Ojala et al., 2004), though rail transport does still have a prominent role in the new EU member states compared to, e.g., Germany and the UK (Persson and Bäckman, 1993). In order to encourage rail freight liberalization, attempts have been made to de-nationalize railways. In regard to this development, Estonia privatized its railways in 2001. EU-wide, this liberalization has lead to many mergers and acquisitions (Lewis et al., 2001).

All the Baltic States depend on **maritime transport** (Ojala et al., 2004). More goods are loaded than unloaded in Baltic ports, indicating the important transit function of the Baltics for natural resources from Russia (European Commission, 2003). Nevertheless, the trend for this transit transport is to decrease due to the redirection of many Russian **pipelines** (Economist, 2003b), and the dependence on Russian transport in the ports is striking. Of the total cargo carried in the Baltic Sea serving the East–West corridor, Estonian ports take care of 12%, Latvian of 28% and Lithuanian ports of 9% (Laurila, 2003). The high percentage of Latvia is explained by its central location: Latvia lies on the south-east coast of the Baltic Sea and has land borders with Lithuania, Estonia, Belarus and Russia. It has a long tradition of trading with its neighbors in northern Europe and offers a natural transit hub for trade with Russia, the EU and Scandinavia. Latvia is therefore often said to be the new transit hub of the Baltics (Bruce-Jones, 1999). Port development and maritime safety are important issues in the Baltic States (Ojala et al., 2004). The poor materials handling and safety standards in the Baltics so far have lead to many companies favoring Finnish ports even for the East–West connection to Russia (Laurila, 2003).

Differing standards for road and rail transport across the EU limit the possibilities for **intermodal** transportation. Around the Baltic Sea, intermodality is favored over combined transportation due to differences in truck lengths in different countries, e.g., Sweden and Germany. Therefore, only containers are carried by vessels across the Baltic Sea rather than trucks. They are then loaded to different types of trucks for final delivery.

Air transportation has been one of the first to adapt to the shift in trading partners (Economist, 2003b). Re-routing aircraft requires less investment into transport infrastructure than the construction of new roads and rail tracks. However, while passenger traffic via air has substantially increased since the early 1990s, air cargo traffic remains low (Ojala et al., 2004). **Information infrastructure** is often quoted as the last mode of transportation (see, e.g., Goh and Ang, 2000). Compared with other modes, information and communication systems are quite developed in the Baltic States (Economist, 2003b).

The change in trading partners (Economist, 2002; Persson and Bäckman, 2003) leads to a shift in interest towards intra-EU trade, and consequently to the construction of North–South corridors. Already in 2002, about 70% of Estonian foreign trade was to and from the European Union; similar figures for Latvia and Lithuania are 60% and 50%, respectively (Ojala et al., 2004). Impediments to these transport flows include the non-existence of railway connections between the capitals of the Baltic States – a relict of Soviet common planning that directed all the routes to Moscow (Economist, 2003b). New corridors are being built within the EU, based on initiatives that place a huge emphasis on rail freight transportation such as the Trans-European Transport Network (TEN), Pan-European Corridors (PAN),

Transport Infrastructure Needs Assessment (TINA) and Pilot Actions for Combined Transport (PACT) (Lewis et al., 2001). But while major traffic flows are redirected rapidly from the East–West to the North–South direction, the construction of their supporting transport infrastructure is lagging behind.

Transport Infrastructure and Economic Development

Before revising the state of the transport infrastructure in the Baltic States, it is important to establish how this factor would relate to economic development. Traditionally, the logistics literature claimed a direct link between economic growth and an increase in freight transportation. Van de Vooren (2004) distinguishes between different types of models linking the demand for transport to economic development: (1) traffic models in which the economy is taken exogenously and influences the economy, and (2) production function, location and general equilibrium models, in which transport influences the economy. But these models do not necessarily contradict each other, because the relationship between an investment into transport infrastructure and economic growth can also be seen in a circular manner (Talley, 1996). Nonetheless, the direct link between freight traffic growth and GDP increase remains disputable. The white paper on European transport in 2001 (European Commission, 2001) initiated a discussion on decoupling these two developments in the hope that economic growth could also be stimulated through other means than increasing freight loads, especially on European roads. Far from being wishful thinking, this decoupling has taken place since the mid-1980s, as freight traffic grows to a larger (not a lower) extent than GDP in the EU (McKinnon, 2004). In any case, freight traffic on EU roads, without even taking the ten new EU member states into consideration, is predicted to grow by 60 billion ton-km per year (European Commission, 2001). This growth will also heavily affect transport volumes and infrastructure in the Baltic States.

It can be argued in a similar manner that the state of an economy can also be depicted through a description of its transport infrastructure. Economies in transition are confronted with different problems and challenges than developed economies in terms of the development of their transport infrastructure (Ülengin and Uray, 1999). The main characteristics of economies in transition are a transport infrastructure under development, variable supplier operating standards, unavailable information and communication systems support and variably available human resources (Simchi-Levi et al., 2003). Nevertheless, Bookbinder and Tan (2003) argue that many so-called "First World" or developed countries struggle with similar problems as economies in transition, especially in their transport infrastructure. Therefore, the state of development of the transport infrastructure in a country or region cannot be used as a factor to describe its level of economic development. Having said this, the fulfilment function of transportation remains a very important factor in economic development, and the state of the transport infrastructure of a country is its main facilitator. Demand for transport in the Baltic States grew three to four times faster than GDP, which is high for economies in transition in which it typically grows 1.5 to two times faster than GDP (Ojala et al., 2004). This growth puts considerable pressure on the development of a functioning transport infrastructure.

Talley (1996) distinguishes between three types of investments into transportation infra-

structure: (1) construction of new transportation systems, (2) expansion or improvements in existing transportation systems, and (3) maintenance and preservation of existing transportation systems. Literature on transport infrastructure typically focuses on one of these investment types. From a historical perspective, US-based transport literature focused on new constructions and expansions in the 1960s and 1970s, establishing a strong link between transport infrastructure investment and GDP growth (Harmatuck, 1996), while more recent literature focuses on maintenance investments which cannot reproduce the link between these and GDP growth so clearly (Gillen, 1996; Harmatuck, 1996). Maintaining a mature transportation infrastructure thus leads to different effects from the construction phase (Gillen, 1996).

The Baltic States are in need of important new construction work along with the maintenance of existing roads, therefore the link between investing into transport infrastructure here and a growth in GDP in the region can be expected. Thus, it is somewhat surprising that the Baltic States neglected investments into transportation infrastructure. While the severity of this negligence varies from one country to another, total road expenditures in CIS countries amount for less than 0.5% of GDP compared to 1% to 2% considered necessary for adequate road maintenance (Queiroz, 2003). When comparing maintenance expenditures to the required minimum maintenance, only Latvia outperforms minimum requirements (Queiroz, 2003).

The low expenditure concerning transport infrastructure in the Baltic States is but one factor of concern to the EU. Another one is the way the transport infrastructure of new member states should be revitalized. The EU hopes to avoid many pitfalls and regulatory developments from the past that proved inefficient (European Commission, 2001; Gentry et al., 1995). This leads to the promotion of certain transportation modes for, e.g., ecological reasons and a discussion on deregulating transportation within the EU (Lewis et al., 2001). Transportation deregulation has been a much-discussed topic mainly in the US (Sankaran, 2000). The EU wants to avoid the big-bang effects of transportation deregulation and opted therefore to liberalize its transport system in a stepwise fashion (Lewis et al., 2001) by abolishing old state monopolies and harmonizing trade among its member states.

Geopolitical Developments around the Baltic States

The logistics literature has discussed for decades the link between economic development and investments into transport infrastructure. The demand for transport is derived from the level of economic activity (van de Vooren, 2004). Business relationships can develop in isolation of a transport infrastructure, but a functioning logistics solution is necessary to fulfill business promises and contracts. The rise and fall of many dot.com companies has illustrated how missing logistics solutions can determine the success of a company. Similarly, an underdeveloped transport infrastructure is a major impediment for the economic development of a region.

Nonetheless, the early 1990s saw little or no investment into transport infrastructure in Central and Eastern Europe (CEE) or the former Soviet Union (FSU) (Queiroz, 2003). Therefore, the transport network in many of these states actually deteriorated during the 1990s, while vehicle operation costs increased hand in hand with an increase in freight volumes (Jauernig and Roe, 2001), an increase in main-

taining vehicles, and longer transit times (Queiroz, 2003). This eased the way for other states in the Baltic Sea region to claim a dominant role as a logistics center, as Sweden or Denmark intended to do (see, e.g., Vigede, 2003 or Matthiessen, 2004). Simultaneously, the Baltic States are making progress in eliminating the remainders of the command economy of the FSU and orientate themselves towards the West (Jauernig and Roe, 2001). In this development, upgrading the transport infrastructure of the Baltic States regained interest (Ojala et al., 2004).

Interest in the Baltic States originates from two distinct assumptions: its importance as a new market within the EU and its transit function for trade with Russia (Bruce-Jones, 1999; Jauernig and Roe, 2001). Combining these assumptions leads to claims of increased trade volumes that the transport infrastructure in the Baltic States must consider. Currently, about 40% of Russian exports to non-Baltic EU member states are transported through the Baltic States (Laurila, 2003).

Recent developments point to another direction. Russia is prepared to pay a fairly high price for its transport autonomy, in particular its independence for transit functions from those FSU countries that sought (and in the meantime achieved) NATO and EU membership (Laurila, 2003). The construction of new Russian ports, e.g., at Primorsk and Batareinaya on the Baltic Sea, and the re-routing of gas and oil pipelines, e.g., a new Baltic Pipeline System bypassing the Baltic States, are significant geopolitical measures taken in this regard (Laurila, 2003). In essence, it is questioned how long the Baltic States will be able to function as gateways for other EU member states to the Russian market. The first signs of a weakening of their position as a gateway are becoming evident, including a decrease in gas and oil transit volumes (Economist, 2003b). Recent geopolitical developments such as the building of a post-Soviet economic union Common Economic Space between Russia, Ukraine, Kazakhstan and Belarus in 2004 that intends to develop into a free-trade zone by 2010 (see, e.g., Blagov, 2004) confirm the separation of the Baltic States from other FSU countries. This will lead to a steady decrease of East–West transit freight volumes in the Baltic States. Such a decrease leaves Russia in a better trading position with the Baltic States (Laurila, 2003) which largely depend on oil and other energy supplies from Russia. This trading position is largely used for Russian transit through Lithuania to the Russian military enclave of Kaliningrad, which is not linked by land to the rest of Russia.

One area of concern related to transportation in the Baltics was transit traffic between the Kaliningrad region and the remainder of the Russian Federation. Officials from both the EU and Russian Federation wanted to bring this issue to a conclusion prior to the 1 May 2004 accession of the Baltic states to the EU Russia wanted the free transit of goods and people between both parts of the Russian Federation. The Baltic States and the EU had valid concerns about the free movement of goods and people to / from Kaliningrad. Therefore, it was necessary to work out an agreement to satisfy all parties. The Commission of the European Communities (CEC) wanted to "retain their sovereign ability to ensure the security and safety of all current and future EU citizens by controlling their borders and the movement of people and goods on their territory" (European Commission 2002). Russia expected compensation and / or concessions from the EU in order to diminish its opposition to the Baltic States joining the EU.

As a result, the EU and Russia agreed to use the Facilitated Transit Document (FTD) for Russian citizens traveling between Kaliningrad and the other part of the Russian Federation by land. At the EU-Russia Summit of November 2002 in Brussels, a mutually satisfactory solution was reached on the issue of Russian citizens' transit by land between the Kaliningrad region and the rest of Russia in the run-up to Lithuania's accession to the EU. Russian citizens travelling to and from Kaliningrad can obtain either an FTD allowing them multi-entry transit through Lithuanian territory or a single transit document, if making a single return trip by rail (Facilitated Rail Transit Document, FRTD). These documents are issued promptly and made available at no or very low cost (Vinokurov, 2004). The majority of the passenger traffic between Kaliningrad and the Russian Federation will pass through Lithuania and Belarus. Therefore, from an EU perspective, the greatest concern over this traffic is the transit through Lithuania. Lithuanian consulates in Russia and Kaliningrad will issue the FTD to Russian citizens who want to travel via bus or car. The Facilitated Railway Transit Document (FRTD) will be issued to Russian citizens crossing Lithuania by train. The process of obtaining a FRTD is a bit more complicated as the rail passenger has to coordinate the visa with the purchase of the rail ticket. Information from the passenger's passport is sent electronically to Lithuanian consular officials where they screen the passengers for ineligible persons. FRTDs are valid for 3 months and multiple transits in Lithuania (Vinokurov, 2004).

The FTD/FRTD policy was successfully introduced on 1 July 2003 and both Russia and the EU have repeatedly expressed satisfaction with its functioning (ECD 2004). The intent of this rail transit program is to have a "high-speed" train that makes no stops in Lithuania. The reality is that the train moves slowly through parts of Lithuania and actually makes stops. This would allow people to jump off the train and enter LT and the EU illegally. This situation needs to be improved upon. Freight traffic moving via trucks is not subject to tariffs or duties and drivers do not need FTDs. However, if the freight does not enter Russia or Kaliningrad it is subject to tariffs and duties as it is no longer considered domestic Russian traffic. Russia has increased the rail rates for traffic via the LT port of Klaipėda significantly in order to move freight via the port of Kaliningrad. This has caused significant decreases in volumes in Klaipėda and large backlogs and poor service in Kaliningrad (Bortelienė, 2004). Lithuania is pressing for equal rates to Klaipėda but has not been successful to date. So the issue of the development of intermodal services to secure smooth cargo flows between countries of the EU and Russia is becoming vital. However, the arrangement for intermodal transportation encounters significant problems. One of them is the usage of different systems of railway transportation law. In Russia the SMGS agreement is in force, while in countries of Central and Western Europe railway transportations are regulated by the Bern cargo conventions (CIM-COTIF). To facilitate cargo transportation from a country that uses SMGS to a country that is a member of CIM-COTIF, a re-execution of transportation documents is necessary (Sea International Business Magazine 2002).

The EU also agreed to help finance the development of the Kaliningrad region and so far has provided approximately 40 million Euros through the Tacis programme. The Tacis Programme, created in 1991, is a European Union initiative for Eastern Europe, the Caucasus and Central Asia, which fosters the de-

velopment of harmonious and prosperous economic and political links between the European Union and these partner countries. Its aim is to support the partner countries' initiatives to develop societies based on political freedoms and economic prosperity. Tacis does this by providing grant finance for know-how to support the process of transition to market economies and democratic societies. Since 1991, Tacis has granted over 2.46 billion Euro for the implementation of more than 1,500 projects in the Russian Federation. Tacis promotes understanding and appreciation of democracy and a market-oriented social and economic system by cultivating links and lasting relationships between organisations in the partner countries and their counterparts in the European Union (European Commission 2002). As the present Tacis regulation is due to expire at the end of 2006, the Commission services are currently in the process of devising a new Tacis concept and regulation. A commission staff working paper highlighted that the two overarching objectives for future Tacis assistance should be poverty reduction and cooperation with the EU. Such programmes will also become more focused than previously, with a limited set of subordinate objectives per country linked to the above-mentioned overarching objectives. Some areas of focus for programmes suggested in the commission staff paper include economic growth, the development of private business and a focus on developing infrastructure networks (European Commission 2004).

New Opportunities for the Transport Sector

Prosperity and the further development of trade among the members of the newly enlarged European Union will inevitably bring new opportunities for the transport sector. One issue to stress is that road and sea transport are not the competing modes but instead are complementary (Grimaldi, 2003). Each transport mode plays a key role in the logistics chain, and only through cooperation can competitive transport services be offered. An additional key requirement for the successful development of a transition country transportation and logistics network would be the knowledge of and familiarity with the concept of supply chain management (SCM). A supply chain (SC) is defined as "a set of three or more entities (organizations or individuals) directly involved in the upstream (suppliers) and downstream (customers) flow of products, services and / or information from a source to a customer" (Mentzer et al., 2001).

The simplest type of SC consists of three parties – a company, a supplier and a customer. A more complex or extended SC consists of suppliers (tier 2) of supplies (tier 1) and customers of the immediate customer (Mentzer, p. 4). Furthermore, it is important for a firm to have a supply chain orientation (SCO) or management philosophy which means the coordination of the entire supply chain from an overall system's perspective. In other words, a SCO involves managing all the various flows in a SC (Mentzer et al., 2001). Once firms have a SCO, they are ready to implement supply chain management (SCM). SCM includes activities such as integrated behavior, cooperation, process integration, sharing of information, risks and rewards, and long-term partnerships/relationships (Mentzer et al., 2001). The ultimate motive behind the formation of a SC is to increase the supply chain competitive advantage both on domestic and global levels (Monczka et.al., 1998).

The concepts of SCO and SCM are widely accepted in the most developed countries as

ways to compete successfully in the global marketplace. The ideas of offshore sourcing, offshore production and international sales are commonplace. It would be of considerable interest to see if managers and employees of firms in the Baltic States are fully aware of SCO or SCM and recognize the import of these approaches to gain or retain a competitive advantage. In the short run companies in the Baltic States have a comparative advantage of relatively low labor rates vis-ą-vis Central and Eastern European (CEE) countries such as Hungary and the Czech Republic and a much wider advantage vis-ą-vis Western EU countries such as Germany, Finland and The Netherlands. However, in the long run, these advantages would diminish as workers in the Baltic countries will demand higher wages and/or relocate to other EU countries where they can earn higher wages (Deloitte and Touche, 2002). Therefore, it will be necessary for Baltic firms to become more competitive in their manufacturing processes and to form linkages with partners throughout the EU. One way to accomplish this is through SCM in which suppliers, producers and customers form alliances.

According to Deloitte and Touche (2000), over 90% of global manufacturers (those in Western Europe, North America and Asia) felt that building and managing an efficient and effective supply chain will be critical for survival. D&T's more recent survey (2002) of firms in the Baltics and the CEE states portrays quite a different picture. Only 4% of Latvian firms, 12% of Lithuanian firms and 14% of Estonian firms thought that an emphasis on SCM is essential for survival. In CEE countries the average figure was almost as low – 18% (D&T, 2002, p.19). Similarly, the growth in the usage of technology for procurement in the SC was considered to be of less importance by Baltic firms – 12% Estonia, 7% Lithuania, and 4% Latvia [percentages of firms that would increase or significantly increases purchases via electronic market places]. This is compared to 11% for CEE firms and from 71 to 84% for global players (Deloitte and Touche, 2002). If such attitudes continue, Baltic firms could be at a serious disadvantage in the EU markets.

Another indicator of effective SCM is the level of cooperation with SC partners such as suppliers. Usually this involves the formation of long-term alliances between manufacturers and a few partners. Some Baltic manufacturers, especially in the dairy industry, have been able to do this as about 80% of supplies come from about 23% of the suppliers (Deloitte and Touche, 2002, p. 20–21). There are more opportunities to gain these partnering efficiencies in other industries. Other performance indicators related to suppliers are the quality and on-time delivery (OTD) of inbound materials. Survey results show that 83% of the Baltic participants regularly received shipments on time versus about 82% for CEE countries and 99% for the top global companies (Deloitte and Touche, 2002, p. 21). The indicator of the quality of inbound materials is often expressed as the number of defective parts per million (PPM) received. The figures for the Baltic survey respondents were about 23,000 PPM. Comparative figures for CEE respondents were 17,000 and for top international firms 4,000 (Deloitte and Touche, 2002, p. 21). The opposite side of the SC is the ability of a manufacturer to provide on-time deliveries to its customers. The average for the Baltic survey participants was approximately 90% vis-à-vis 87% for CEE firms and 99% for top quartile performers (Deloitte and Touche, 2000, p. 22).

The bottom line is that supply chains will be a source of competitive advantage for first movers and the downfall of those who hestita-

te (Deloitte and Touche, 2000). Investing in information technology and the development of, e.g., strategic alliances with suppliers are key drivers for developing a competitive advantage as the global market moves towards a cooperative supply chain structure. Today, too few Baltic manufacturers embrace the concept of SCM and thus this area represents an area of opportunity to increase performance, not only company performance, but the performance of the extended supply chain.

Conclusion

May 2004 marked a historical era for Europe with ten new countries from Eastern Europe and the Mediterranean joining the European Union. The European integration is a challenge bringing about new opportunities of economic growth also for the transport sector. Today, however, the infrastructure of most accession countries is unable to cope with the new transport needs and is hindering the development of sustainable transport networks (Grimaldi 2003). The aim of this paper was to review the current state of (non-military) transport infrastructure in the Baltic States and then discuss its main developments and challenges. Interest in the Baltic States originates from two distinct perspectives their importance as a new market within the EU and its transit function for trade with Russia (Bruce-Jones, 1999; Jauernig and Roe, 2001). Combining these views leads to forecasts of raising trade volumes that the transport infrastructure in the Baltic States must consider. Currently, about 40% of Russian exports to non-Baltic EU member states are transported through the Baltic States (Laurila, 2003). Recent developments point to another direction. In essence, it is questioned how long the Baltic States will be able to function as a gateway for other EU member states to the Russian market. The first signs of a weakening of their position as a gateway are becoming evident, including a decrease in gas and oil transit volumes (Economist, 2003b). A good example is the Port of Klaipeda, where in 2000 Russian cargo (without petrochemicals) constituted 31% of the turnover and in 2003 only 2% (Borteliene, 2004). Keeping this in mind, a sound strategy seems to be the heavy investments and priority that Lithuania has given to modernization and development of its road transport infrastructure (Sea International Business Magazine, 2004), as road transport accounts for 75% of freight movements in the EU (Gentry et al., 1995). However, it must be kept in mind that each mode of transport plays a key role in the logistics chain, and only through a close co-operation can competitive transport services be offered to meet the needs of the clientele. This type of cooperation does, however, require knowledge and understanding of the SCM concept, as discussed earlier.

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TRANSPORTO IR LOGISTIKOS TINKLAI BALTIJOS ŠALYSE: EKONOMINĖS PLĖTROS IR INTEGRACIJOS Į ES SĄLYGOS

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Santrauka

Susidomėjimą Baltijos šalių transporto ir logistikos tinklų infrastruktūros tyrimu lėmė dvi aplinkybės, pirma, jų, kaip naujų ES rinkų, svarba, ir antra, tranzitinė funkcija plėtojant ES šalių prekybą su Rusija ir kitomis NVS šalimis. Straipsnyje nagrinėjama transporto ir logistikos tinklų bei infrastruktūros būklė Estijoje, Latvijoje ir Lietuvoje bei aptariamos jos tolesnės plėtros kryptys ir iššūkiai. Apžvelgiami Baltijos šalių svarbiausi transporto srautai, prekybos partneriai, vežamų prekių ir krovinių tipai ir rūšys.

Straipsnyje daug dėmesio skiriama rinkų, prekių ir prekybos srautų galimų pasikeitimų, kuriuos lems narystė ES, tyrimui. Tyrimas taip pat apima tranzito per Baltijos šalis bei su tuo susijusių Estijos, Latvijos ir Lietuvos vežėjų galimybių dalyvauti tranzitinių vežimų versle, tyrimą. Ieškoma atsakymo į klausimą, ar ilgai Baltijos valstybės galės atlikti kitų ES valstybių eksporto į Rusijos rinką vartų funkciją.

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