Maritime companies and their business networks in the Central Baltic region

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SMARTCOMP
SMART COMPETITIVENESS FOR THE CENTRAL BALTIC REGION

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1 SUMMARY

This SmartComp Research Report provides an analysis on the cooperation relationships and networks of the maritime companies in the Central Baltic region (CBR). The main objective is to explore the business networks within and between the CBR maritime clusters and analyse how networking could be further supported. The research is based on a survey for maritime cluster companies and case company interviews, which were conducted simultaneously in Estonia, Finland and Latvia. The main topics covered through the survey include the current state and future of the maritime clusters, the national and international networks, and innovation activities. Regarding the interviews, the focus was set on the companies' business networks in order to identify new ways to support the competitiveness and interaction of the maritime companies.

The maritime clusters of Estonia, Finland and Latvia all have developed intra-cluster networks but the clusters themselves are structured rather differently. In Estonia and Latvia, maritime logistics and their networks play an important role, whereas the Finnish maritime cluster is characterized particularly by the well-developed networks of the shipbuilding industry. Thus, also the content and level of cooperation varies among the clusters. Naturally, vertical cooperation within value chains is common for the Estonian, Finnish and Latvian maritime cluster companies, for instance in R&D. Companies also have horizontal-level cooperative relationships, for example within various projects, in which the different competencies of companies are seen as complementary. However, significant potential for increasing such relationships was recognized. The level of internationalization was also one of the key issues – particularly large companies are active in international networks, but also SMEs should increasingly engage in such activities in order to learn and find new markets for their knowhow.

In all the three clusters, companies highlighted the role of various associations as platforms for cooperation. In addition, triple helix cooperation was characteristic for all these clusters. Companies are involved in R&D, innovation and educational cooperation with universities and research institutions, contributing to, for instance, product development and training of competent employees. Governments and municipalities, in turn, are involved in the clusters' development through shaping their business environments and implementing cluster-related policies.

Although having somewhat different structures and competence areas, the maritime clusters in Estonia, Finland and Latvia seem to share similar challenges. For example, there is continuous need for R&D and product development, while the lack of workforce was brought up particularly concerning the Estonian and Latvian clusters and there is need for increased maritime education also in Finland. Regarding shipping companies, the sulphur directive is seen as a major challenge, and the development of the Port of Ust-Luga is likely to influence the Russian transit traffic volumes currently flowing through the ports of Estonia, Finland and Latvia.

The survey as well as the interviews resulted in a great amount of suggestions concerning what kind of problematic issues should be tackled and what kind of actions should be taken. The points summarized in the report concern developing both national and CBR-level competitiveness of these maritime clusters, particularly through increased horizontal cooperation.

2 INTRODUCTION

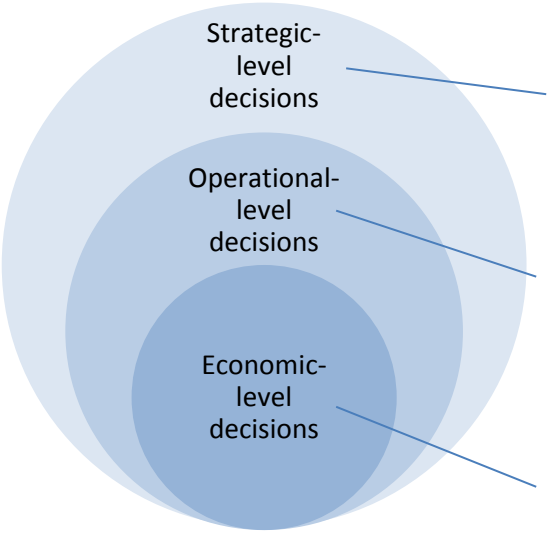
The maritime clusters in the Baltic Sea region are facing various new challenges. The competitive advantage of the Far Eastern maritime shipbuilders lies in producing series of standardized vessels at low costs, whereas the European shipyards with their subcontractors and suppliers provide specialized solutions and technologies. For the European maritime clusters, keeping one step ahead of the fast-growing Asian competitors is not an easy task. At the same time, the local environment is facing changes that affect also shipping companies, ports and port operators – for instance, the tightening environmental regulations as well as rising cost levels are currently shaping the maritime clusters' business environment in the Baltic Sea region. The political decision-makers as well as various interest groups and associations also strongly affect the maritime actors' playground. All these developments have their impact on cluster competitiveness – how could the clusters increase mutual cooperation, and could that be a new source of competitiveness in the midst of the rapidly changing business environment?

2.1 ABOUT SMARTCOMP AND THIS REPORT

SmartComp – Smart Competitiveness for the Central Baltic region is a Central Baltic INTERREG IV A Programme 2007–2013 financed project which aims to support smart, environmentally sustainable development, growth, competition and cooperation between maritime clusters, cities and universities in the Central Baltic region, i.e. in Estonia, Finland, Latvia and Sweden. The partners involved in the project include Union of the Baltic Cities, Commission on Environment Secretariat (Lead Partner, Finland), University of Turku/Centre for Maritime Studies (Finland), University of Turku/Turku School of Economics (Finland), Centrum Balticum Foundation (Finland), Åbo Akademi University (Finland), Tallinn University of Technology (Estonia), University of Tallinn (Estonia), Riga International School of Economics and Business Administration (Latvia), and Latvian Maritime Academy (Latvia). Through triple helix cooperation, this consortium seeks new opportunities for the maritime clusters in the Central Baltic region. The project is divided into four Work Packages: (WP1) Management, (WP2) Research and analysis, (WP3) Training and consultation, and (WP4) Policy development and branding. This publication is the second research report of WP2, describing and analysing the maritime cluster companies' business networks in the Central Baltic region.

The aims of the project include analysing the applied business models, networks and competitiveness of the maritime clusters in the Central Baltic region. When it comes to business models, Morris et al. (2005) note that there is no generally accepted definition for this concept, and while analysing earlier research on this topic, they were able to identify three general categories of decision variables that a business model may include. As illustrated in Figure 1, the categories comprise the economic, operational, and strategic level variables.

Figure 1. Decision variable categories of a business model



Decisions regarding the overall direction in the firm's market positioning, interactions across organizational boundaries, and growth opportunities; including stakeholder identification, value creation, differentiation, vision, values, and networks and alliances.

Decisions related to internal processes and design of infrastructure that enables the firm to create value; including production or service delivery methods, administrative processes, resource flows, knowledge management, and logistical streams.

Decisions related to the logic of profit generation; including revenue sources, pricing methodologies, cost structures, margins, and expected volumes.

Source: Morris et al. 2005, 726–727.

While aiming at supporting the maritime clusters' future development and competitiveness, this research is to focus on the strategic level understanding and decision elements of a business model, particularly emphasizing the issue of networks and alliances, which can, if strategically agreed by the relevant companies, be the source of joint competitiveness in the Central Baltic region. Thus, the aim is to study the companies' strategic views on cooperation with the other maritime cluster actors both nationally and abroad.

Regarding scientific literature on networks, the amount of earlier research is vast, comprising various perspectives on the motives, success factors, risks, structural constructions and formation processes, for instance. There have always been some kind of business networks, but recently there has been a rapid evolution in their number, form and complexity (Halinen & Törnroos 2005). In business-to-business settings, particularly dyadic relationships between firms have been of paramount interest as business networks can be regarded as sets of connected relationships between firms. Networks are expected to possess advantages beyond the involved dyadic relations (Anderson et al. 1994), and the relationships that a firm has are one of the most valuable resources that it possesses, due to the provided benefits such as the increased access to resources, knowledge and markets. As a result, instead of understanding the network dynamics, the focus of research is shifting to managing these valuable business relationships and networks, although such loosely coupled and self-developing relations definitely are not easy to manage. (Ritter et al. 2004)

Firms develop relationships with various types of firms and other kinds of organizations because they affect, directly or indirectly, their performance. Basically, such interfirm relationships can be formed with customers, suppliers, complementors and competitors. (Ritter at al. 2004) The first two belong to a company's supply chain, and such cooperation hence takes place at the vertical level. With the latter two, in turn, cooperation takes place with actors operating "at the same level" in relation to customers and suppliers, i.e. at the horizontal level. Vertical level cooperation can be

regarded as taking place naturally, and such relationships have been a focal research area. Horizontal relationships, in turn, have not received that much attention from scholars. Particularly cooperation relationships with competitors are of increasing interest, as in the globalised world companies have to form new kinds of groups in order to gain access to certain markets or projects and in order to form sufficient pools of resources and offerings. However, research on coopetition, i.e. simultaneous cooperation and competition, is only at an emerging phase and does not yet provide adequate theoretizations for researchers and business representatives for considering such opportunities and strategies. (e.g. Osarenkhoe 2010)

Regarding earlier research on maritime cluster networks, various studies have been conducted, for instance focusing on a certain geographical area (e.g. *The role of Maritime Clusters to enhance the strength and development of European maritime sectors* by PRC 2008; *Suomen meriklusteri 2008* by Karvonen et al. 2008; *Estonian maritime cluster* by Portsmuth et al. 2011; *Development of the Latvian Maritime Policy; A Maritime Cluster Approach* by Gailitis & Jansen 2012). However, no earlier studies were found to discuss the maritime cluster cooperation in the Central Baltic region. In addition, there are several projects underway studying the dynamics of the maritime industry (e.g. *StarDust Innovation Project* co-financed by the European Union's Baltic Sea Region Programme 2007–2013 and *MariTime Hubs Project – best practices for the structural changes in the maritime industry in the EU* partly financed by European Social Fund), which, however, do not focus on the business and innovation cooperation within the Central Baltic region area. While the maritime clusters in this region are facing new challenges regarding their competitiveness and while these clusters could presumably benefit from joint cooperation, there is obvious demand for such research and analysis in order to discover and make the most of the joint cooperation possibilities.

This report is to fill both the theoretical and empirical research gaps by contributing to the existing literature with an analysis on the cooperation relationships and networks of the maritime companies in the Central Baltic region. More specifically, the main objective of this research is to explore the business networks within and between the Central Baltic region maritime clusters and to analyse how networking could be further supported. The objective has been further divided into the following sub-questions:

1. How nationally and internationally networked are the target companies within the maritime cluster?
2. How have they developed their cooperation relationships, both vertical and horizontal?
3. How do they see the future of their networks?

2.2 RESEARCH GROUP AND STRUCTURE OF THE RESEARCH

This research report was produced in November–June 2013 by the project research group comprising Kari Liuhto, Eini Laaksonen, Hanna Mäkinen and Akseli Jouttenus from the Pan-European Institute at Turku School of Economics at the University of Turku (Finland); Alari Purju and Eva Branten from Tallinn University of Technology (Estonia); Aldis Bulis from the Latvian Maritime Academy (Latvia); and Annemari Andrésen and Jenni Junnelius from Åbo Akademi University (Finland). Brief descriptions of each member of the multidisciplinary research group are presented next.

WP2 leader **Kari Liuhto** is Professor in International Business (specialisation Russia), Director of the Pan-European Institute at the University of Turku, Finland, and Director of Finland's Baltic Sea region think tank called Centrum Balticum. His research interests include EU-Russia economic relations, energy relations in particular, foreign investments into Russia and the investments of Russian firms abroad, and Russia's economic policy measures of strategic significance. Liuhto has been involved in several Russia-related projects funded by Finnish institutions and foreign ones, such as the Prime Minister's Office, various Finnish ministries and the Parliament of Finland, the European Commission, the European Parliament, and the United Nations. M.Sc. (econ) **Eini Laaksonen** is Project Researcher at the Pan-European Institute. She has specialised in International Business with an emphasis on the economic development of the Baltic Sea and Barents Sea regions. Energy and maritime sectors are of particular interest to her. She has been involved in several research projects and has published articles concerning business prospects and risks in the Barents and Baltic Sea regions, most recently focusing on the maritime cluster developments. **Hanna Mäkinen** holds Master of Arts in General History, Political Science and Contemporary History from the University of Turku. She currently works as Project Researcher at the Pan-European Institute. She has been working in various research-related positions at the Pan-European Institute since 2008 and has been involved in several research projects. Her main research interests include economic and political development of the Baltic Sea region, recently focusing particularly on the maritime cluster developments, and contemporary history of the Baltic States. **Akseli Jouttenus** is Research Assistant at the Pan-European Institute. He is also studying accounting and finance at Turku School of Economics.

Alari Purju is Professor of Public Economics at Tallinn University of Technology, School of Economics and Business Administration. His research areas are public economics and taxation, comparative institutional economics and development economics. **Eva Branten** graduated from Tallinn University of Technology, School of Economics and Business Administration in 2012. She is Project Research Associate in SmartComp project at Department of Public Economics at Tallinn University of Technology.

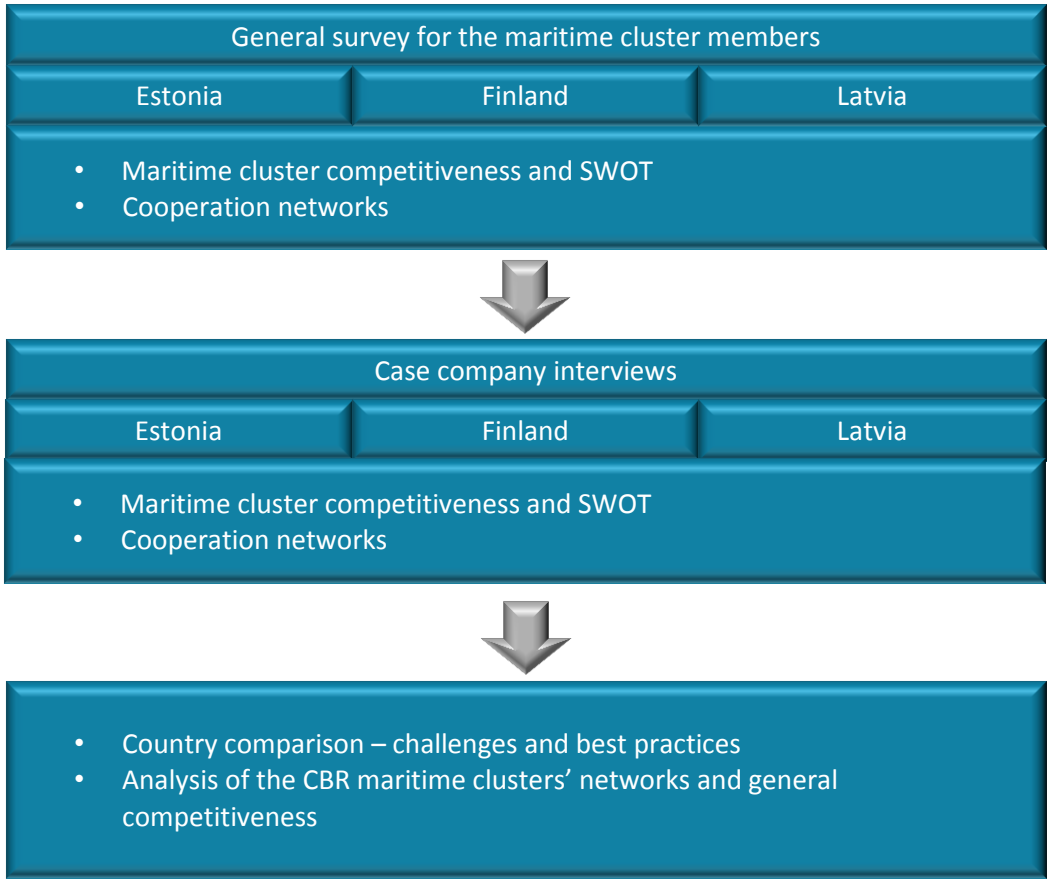
Aldis Bulis is Manager of the Latvian Supply Chain Cluster and PhD student in Economics at the University of Latvia, Faculty of Economics and Management. He has studied at the Trier University (Germany) and has improved his qualification in different educational seminars in Frankfurt, Berlin, Tallinn and Riga. His main research specializations are the economic development of the European Union, the EU–China economic relations, competitiveness of Latvian companies, international freight transit transport in Latvia and think tanks in policy making.

M.Sc. (econ) **Annemari Andrésen** works as a Researcher at Åbo Akademi University, Laboratory of Industrial Management and as a Manager at PBI Research Institute. She has conducted extensive research for the marine industry for over 15 years. Her areas of expertise are business relations (customer, supplier and employee relationships) and business model development. She has been involved in several research programs and strategic assignments regarding value creation, business logic and business model development in project-based firms. She has carried out close to 1000 personal interviews across the world and produced solutions to complex problems relating to customer management and value-adding. M.Sc (econ) **Jenni Junnelius** is working as Junior Analyst at

PBI Research Institute at Åbo Akademi University. She also holds a Master's degree in sociology from Helsinki University. At PBI she has focused on projects related to the maritime industry.

The structure of the research[1] follows the construct presented in the SmartComp Work Plan for WP2. This structure is presented in Figure 1.

Figure 2. Structure of the research



As originally planned and presented in the Work Plan, the work for Task 2 began in November 2012 with drafting the survey questions. The questions of the survey were based on the most topical issues from Task 1, including statements concerning the current state and future of the maritime clusters, the national and international networks, and innovation activities, for instance. However, to maximise the amount of responses, the aim was to keep the questionnaire brief and simple with only few open questions. The contents of the survey were finalized in January, after which the survey and cover letter were translated to the respondents' native languages, to Finnish, Estonian and Latvian, by the partner organisations, and to Russian by an external language office. The survey

[1] Although discussed in the First SmartComp Research Report, Sweden was not included in the focus countries of Task 2, which was taken into account already in the Work Plan for WP2. Conducting research there, with the same level of intensity but without a local partner, was considered unmanageable among the Estonian, Finnish and Latvian project partners within the given time frame.

and the cover letter were uploaded to Webropol system by PEI, and after several rounds of testing, the survey was submitted on the 31st of January 2013 to the respondents via email. The list of respondents included maritime companies in Estonia (548), Finland (1459) and Latvia (153), which had been mapped by the respective partners in the autumn 2012. The Webropol system automatically collected the responses into an easily analyzable format, and two reminders were sent to the companies to increase the number of responses. The survey was closed at the end of March. From Estonia the number of received responses was 36, from Finland 95, and from Latvia 5. Most likely due to the high number of simultaneous surveys taking place particularly in Finland, the response rates were rather low. However, the survey provided the researchers valuable information on the views of the different cluster sectors and provided a basis for the following case company interviews. Survey results are also included in the country chapters, except for Latvia, from where only a few responses were received.

While the survey was still running, the preliminary structure for the interview questions was already presented at a Partner Meeting in Tallinn on the 14th of February 2013 by PEI. The questions were finalized on the 11th of March, and in order to support the interaction of the maritime clusters in the Central Baltic region, the focus of this part of the study was set on the companies' business networks. Particularly regarding building and developing partnerships, the questions followed the structure used earlier by Tuten and Urban (2001). The recorded interviews with selected case companies took place face to face or via telephone in Estonia, Finland and Latvia respectively, and were finalized by the end of April. The list of interviewees can be seen in Appendix 1. Analysis of the interview materials took place in Estonia by TUT, in Finland by PEI and ÅAU, and in Latvia by LMA. The country chapters were authored as follows:

- The Estonian maritime cluster – Alari Purju and Eva Branten
- The Finnish maritime cluster – Annemari Andrésen, Jenni Junnelius, Eini Laaksonen and Hanna Mäkinen
- The Latvian maritime cluster – Aldis Bulis

The country chapters were compiled in May, followed by a concluding analysis.

The report contributes to the project outcomes with a comprehensive description and analysis on the maritime cluster networks in the Central Baltic region, and supports the research to be conducted in the following phase, i.e. comparing the future perspectives of the CBR in relation to other strong maritime clusters around the world. At the same time, the report provides fresh ideas and viewpoints to be discussed in Work Packages 3 and 4. For more information about the forthcoming SmartComp publications and events, please visit www.cb-smartcomp.eu.

3 THE ESTONIAN MARITIME CLUSTER

By Alari Purju and Eva Branten

3.1 MARITIME CLUSTER NETWORKS

The maritime cluster networks cover a wide set of activities. At the same time, the meaning of networks for particular sectors varies. Big infrastructure companies, such as ports, are providers of business and technical infrastructure for shipping and cargo companies and horizontal networks are initiated by the need to use particular infrastructure and by the supply of certain technical capacities for operators. In shipbuilding technically very different processing operations are involved in production and different technical systems are combined together in producing certain products (engineering of engines, metal working, development of electrical systems, navigation tools, and loading cranes and other equipment). These different parts of production could be vertically integrated into one company or could be organized through horizontal network integrating together companies active in different production sectors.

Shipping companies operate ships, some shipping companies also own them, and other companies lease them from other companies. Shipping companies' networks depend on their customers. They could deal with passengers or they could ship products. They could combine these operations into one shipping product if the ships are transporting for example at the same time passengers and trucks with products. The cargo and service companies' activities are based on networks because their main business is to serve owners of traded products by transporting these products from one geographical location to another with providing all necessary services for it. The associations and other units are providing services targeting directly networking of companies. Thus, from the business point of view, the networks are important for all companies and other organizations in the sector but their meaning varies in different areas. To make specifications possible and to provide more structured information on networking, the issue is analyzed by the different segments of the maritime cluster.

Ports

The Port of Tallinn (PT) and Port of Sillamäe (PS) have been interviewed. Both are the landlord type of ports providing infrastructure for different operators. PT is in state ownership whereas PS belongs to a business group and is in private ownership. PT provides first of all the environment for activities of other companies, such as cargo and shipping firms. Distribution centres for food products but also plastics targeting Russian market as well as other markets up to Ukraine are planned. One idea is to provide storage capacities for companies acting on the Russian market. These companies would not like to export all products at the same time into Russia's risky environment but would prefer to store some part of these products in a relatively risk-free economic zone. Free zone is preferable to custom-free area because there is no time limit how long the company can keep products there and also number of transactions with these products is not limited. In addition, mixing together fuels is a service which could take place in this territory – not refining but mechanical mixing. It is also possible to pack fertilizers into smaller units for export to customers from Belarus to Western Europe or other places. The main partners are Vopak (the largest oil cargo company), Tallink, the permanent ship lines and the fertilizer's terminal.

PS has also logistic and industrial parks, and its services include building right to the land, right to use piers, heat, water, electricity, sewerage, environmental monitoring and consultations, security service, railway services in territory of port and DAF Estonian border. Several services are used by companies belonging to the same business group. For instance, Silsteve is a company inside the group which provides stevedore services.

The PT and PS try to provide the necessary improvements in infrastructure, such as higher cranes and better technical equipment. The main advantages of the Estonian ports are that all their costs together are lower compared to the ports of Nordic countries, labour costs are lower and there are no strikes. Estonia's competitive position is somewhat different from the Finnish case, for instance, as Estonia competes for material flows, whereas the Finnish ports largely serve the domestic exports.

Shipbuilding and repair companies

The value chain in this sub sector is built up according to the business logic of the area. There has been core business like ship repair and building, which needs a lot of specific supportive services and products. These competences have been developed inside the group, as occurred in the big group like BLRT Grupp, or have to be purchased on regular basis in the case of smaller companies. Inside the BLRT, these specialized companies started to be in some cases quite independent and provided some services also to companies outside the group. At the same time, the BLRT moved into markets in other countries, purchased companies or created joint ventures, and also the set of supportive services had to be reorganised adding new units if necessary in countries like Norway or Lithuania.

The market of shipbuilding consists of different segments. BLRT is specialised on a particular type of smaller ships for specific purposes. The company is not competing in the segment of big cruise ships, which are constructed for instance in Turku. A lot of components from aluminium and steel are constructed in Estonia. 15–20 years ago 80% of the construction work for cruise vessels was done locally at Turku shipyard, whereas 20% was outsourced. Today, 80% is outsourced to other parties and the shipyard is more focused on assembling the subcontracted areas. The limited orders for Turku shipyards mean that also BLRT and other Estonian companies will have less work to do.

BLRT has a joint venture with Wärtsilä and the main business of this joint company is to serve ship engines on ships constructed by BLRT. The larger ships of BLRT constructed in Lithuania have Wärtsilä engines. Ships constructed in Estonia are smaller and they have engines constructed by other companies. BLRT is partner in construction of a power station near Tallinn in which Elering is the customer, Wärtsilä is the main contractor and BLRT is a subcontractor.

Shipping companies

Tallink but also Saaremaa shipping company has a very strong cooperation with the Tourism Association. At the Tourism Fair in Finland, Tallink has a powerful billboard, and the company also takes part in the Estonian Tourism Fair. Tallink has made long-term contracts with tourism companies for many years, not only in Estonia, but in Russia, Finland, Sweden, Latvia and Lithuania as well. The contracts are permanent, but are reviewed annually. There are also a huge number of contracts with companies who transport goods, such as road transport.

Tallink has ordered new ships mainly from Finland. The orders have been related to cooperation with engineering companies and shipbuilders. Tallink does not have a preference for a particular shipyard, many shipyards are given the bids and then the company decides which partner is chosen. Partners are also ports; in Estonia mainly the Port of Tallinn, but the Port of Stockholm is also a very important partner for Tallink. Their representatives are visiting Tallinn regularly and Tallink has an office in Stockholm for sales in Sweden.

Cargo and service companies

The main business of the Estonian cargo companies is usually imports, and to a smaller extent also exports and transit mainly to Russia and Ukraine. The companies also provide related services, like warehousing, customs clearance, and insurances for goods. Shipping lines are considered as strategic partners – Maersk (the largest partner), MSC, APL, as well as smaller shipping lines. Arrangements and contracts are made with shipping lines, and there are fewer contacts with ports. Which ports are used to transport products depends on the agreements with the clients.

Participation in networks has primarily the aim of exchanging contacts, since the members of these networks are reliable professional companies. Participation in fairs and networks is a purposeful activity for the cargo handling companies. Cooperation takes place also with competitors (companies who operate in the same field) within various associations. The choice of partners depends on many factors, first and foremost on changes on the market, including the structure of exports and imports.

Regarding the cooperation of Estonian maritime companies in general, the survey results indicated that the most important forms of inter-company cooperation are exports and other international operations, marketing, and education and training. When it comes to the directions of cooperation, it can be said that all the sectors of the cluster are rather well connected internationally, mostly at the European level. These results as well as the surveyed companies' views on the future development of their cooperation networks are illustrated below.

Figure 3. The most important forms of cooperation with other companies

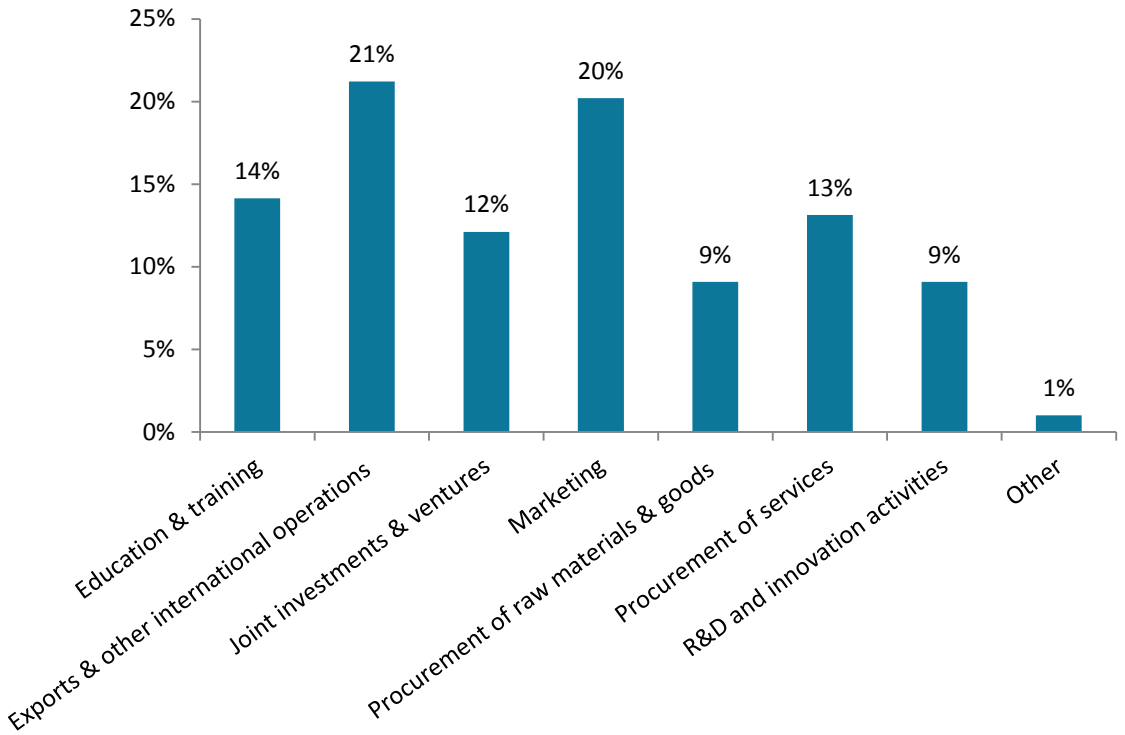


Figure 4. Location of customers of different maritime sectors

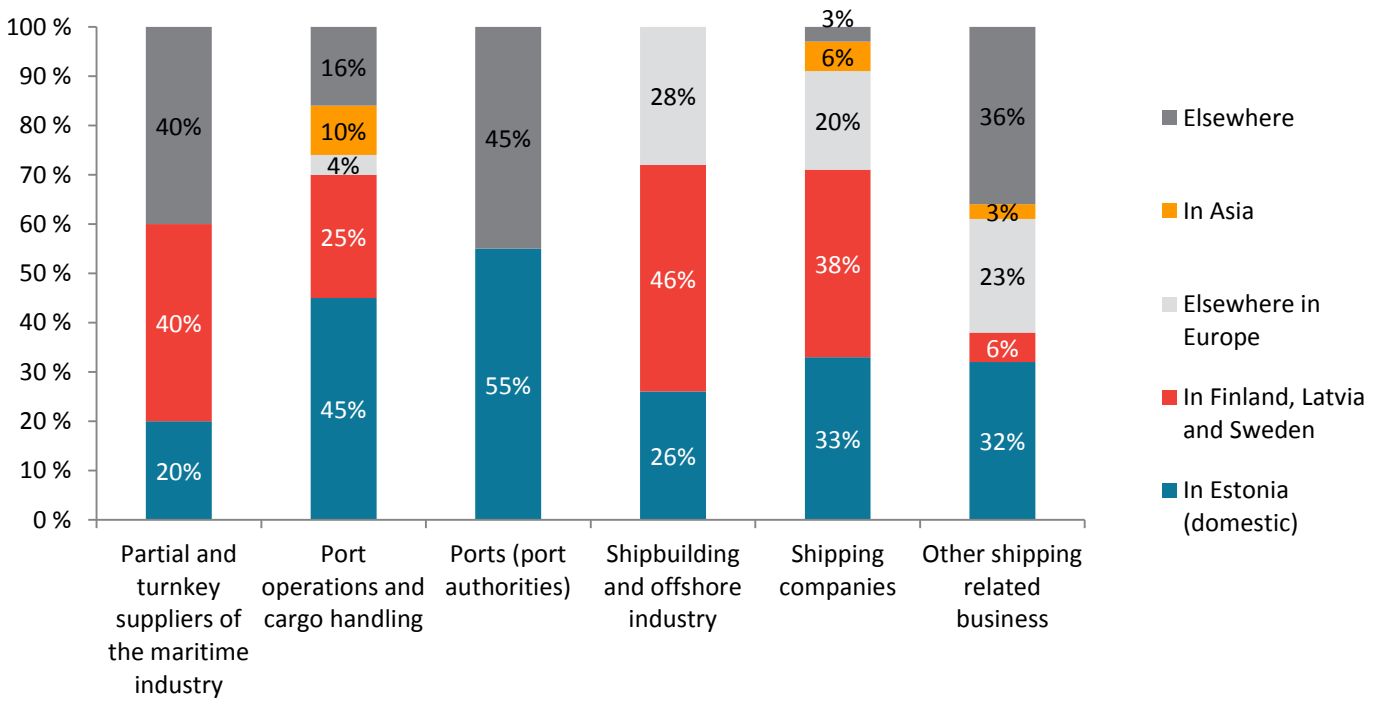


Figure 5. Location of suppliers and subcontractors of different maritime sectors

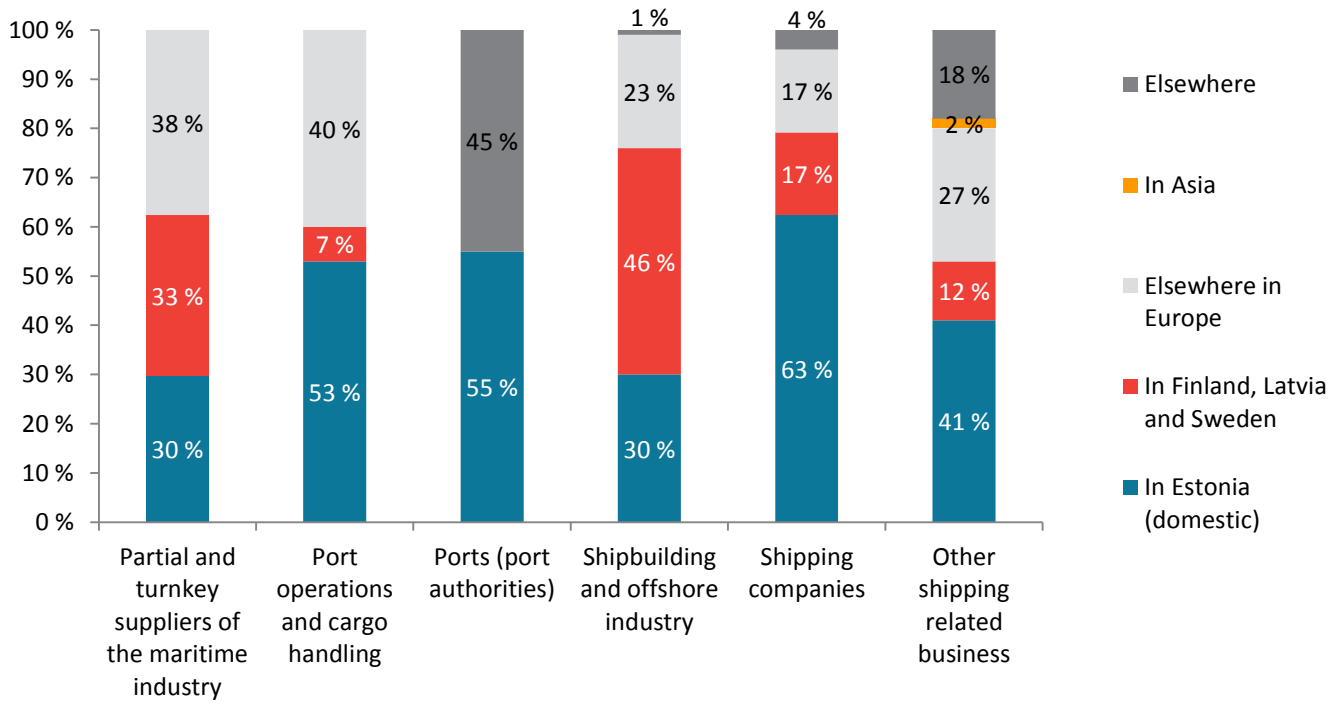
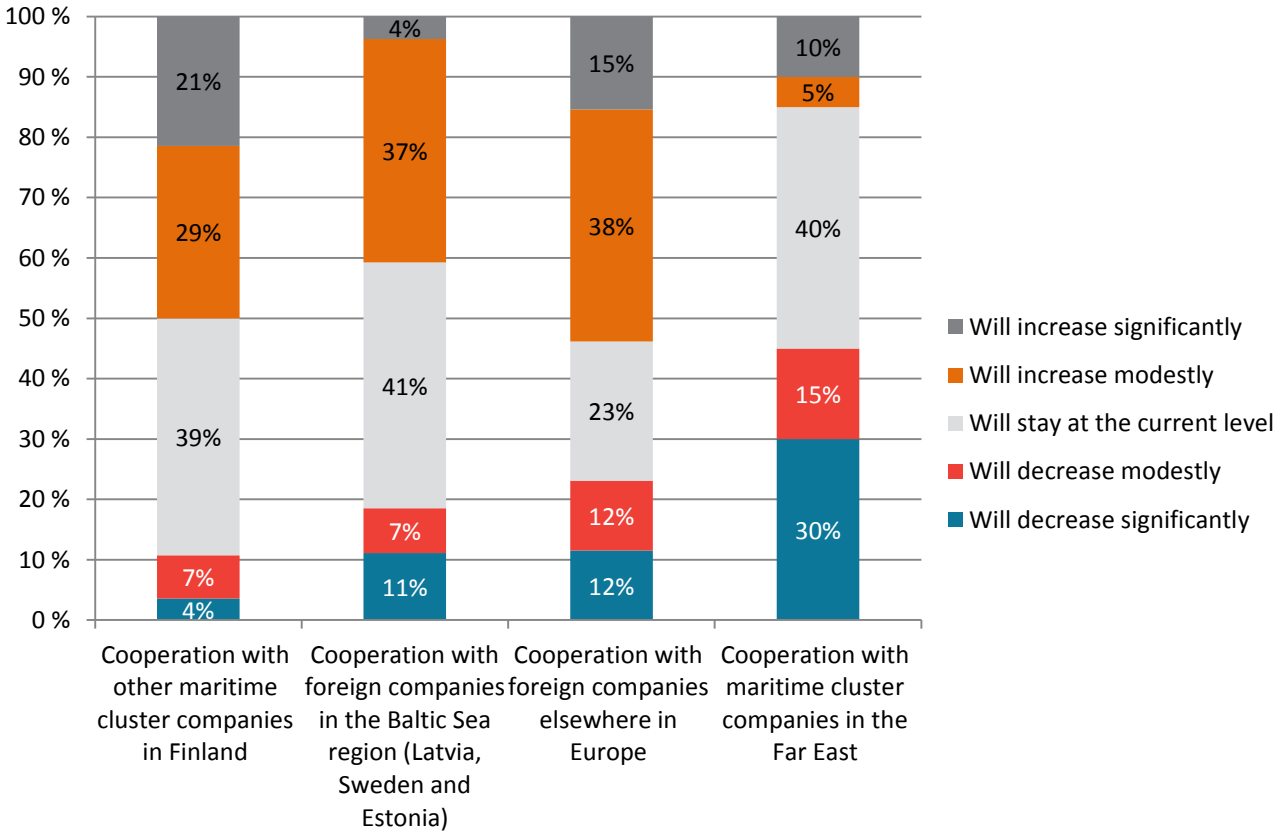


Figure 6. Companies' views on their cooperation networks after 5 years from now



3.2 BUILDING PARTNERSHIPS

Ports

Estonian ports belong to different networks. There is a wide set of options how to get contacts with customers. Participation in networks gives additional information and a good basis to create useful contacts. The simple logic is that if you do not participate then the options will not emerge. Regularity and size of volumes matter in the case of choosing the partners. The company also deals with partners who have not yet decided which port to use. If it is a regular partner located in the port, then there is a limited set of services PT could additionally provide (to help in customs procedures).

There are the EU level projects like Port Integration and Port Interland. The ports organize conferences. There is an Association of European ports and its main purpose is to lobby at the EU level. PT is a member of the Association Ecoports which provides experience and information on how to deal with environmental issues. Cruise Baltic, where the ports on the coast of the Baltic Sea try to attract jointly cruising ships from other continents to visit the Baltic area cities and ports, is one example of cooperation. That is a wide network covering several cities and ports in the Baltic Sea with the purpose to make the region globally more visible for clients from Asia, the USA and other areas.

There are, first of all, the conference types of events where the representatives of the companies meet. One goal is to meet potential clients and to attract them to use Estonian ports. Visits to the Nordic countries to describe business conditions in Tallinn, Paldiski, Sillamäe and Saaremaa, and to attract companies from these countries to invest in Estonia, are also important.

There could be new possibilities for cooperation between the ports. Now it is hard to imagine that if some company contacts certain port with plans to start some kind of manufacturing, the respective port would suggest starting this business in other port. Could be that if there are environmental risks, then the Nordic ports would suggest going to the Baltic States' ports, because they have a pre-assumption that the Baltic ports are still more ready to accept these environmental risks. In addition, there could be cooperation if the BSR sees regional competition with the Mediterranean area or with Western Europe. The cluster should consist of not just competing sea lines but ports, sea lines, manufacturing areas around the ports, and other services and components of the supply chain.

One complicated issue for ports is related to local governments. Tallinn City government is supporting entrepreneurship. At the same time, it took five years to get another local government to adopt a new detailed planning map which did not apply for new territories but just reorganized functions of already existing plots. In Sillamäe, the interrelationship of the port with the town is good. The company has a hostel and means of transportation to serve local needs. The company also trains specialists for the port in cooperation with Sillamäe Vocational Training Centre.

Ship building and repair companies

The rules in shipbuilding are more binding, new materials are used and new technologies are available, which should be taken into account. If the project is purchased from a specialized engineering company, the first things are improvements, modifications and proposals to rationalize

the production. There is a partnership between the designer and the production company. If there is a single project, it is purchased and all these aspects of cooperation are important. If the production starts to be serial, there is a need to develop the company's capacity to design the product.

Cooperation with competitors takes place if there is a business need for this. The competitor-partnership is successful when there are big orders and the companies alone are too small or their particular technical qualities are limited for these big projects. For example, the competence in building aluminium ships is limited and cooperation is needed for BLRT in this field with companies like Baltic Workboats. The Baltic Work Boat company in Saaremaa belongs to the Baltic Marine Group and the orders of different technical systems come from this company also for the BLRT. Employees, as well, are moving from one company to other in the framework of joint projects.

The companies meet at fairs and follow each other's production. If there is a need to cooperate, the cooperation offers are made on the basis of these personal contacts and information. One reason for networking in R&D with respective institutions has been a need for laboratory services. Necessary tools for measurement of metals have been developed together with universities.

In the shipbuilding sector, the TUT and Aalto University are teaching very specific shipbuilding-related knowledge. For the company, the knowledge of graduates is very limited and the necessary retraining takes place in the company. There is a need for wide-based approach to shipbuilding. The training in concrete technical details is on a high level, but understanding about a ship as a complex of different technical systems is missing. There is a need for 100 engineers in the shipbuilding industry according to the information from the representative of the shipbuilding company BLRT. This type of education is also limited in the whole Europe at the moment.

The companies have ISO14001 certificates and fulfil these requirements. The companies have also their environmental development plans and have been cooperating with local municipalities and respective auditing organisations in this field.

Shipping companies

Building partnerships is very business oriented. In the case of repair, every lay day is expensive, and it needs to be calculated how much the repair will take time, and how expensive is passing. It is not clear that BLRT located in Estonia will always be the best offer. If it is beneficial for a company, it goes for ship repair to Poland, for instance.

When it comes to specific analysis, the company orders it from specialized consulting companies dealing regularly with maritime sector problems. If Tallink, for instance, wants to know what it means for them to reconstruct the ships according to the requirements of the sulphur directive, they will order the calculations from a Finnish company. It would be perfect if there were such a scientific center, which studies shipbuilding problems and problems related to environmental protection, which are common for all of companies in the sector and which are not related to competition between companies providing transportation services.

Between the ship-owners, who are acting in the Central Baltic region, Viking Line and Eckerö Line, there is not any cooperation. There is not any legal possibility to make direct cooperation for example with Viking Line. With regard to sulphur directive, cooperation takes place at the level of

associations, not at the level of ship-owners. Now some cooperation is needed as regards sulphur scrubbers, which all ships would need.

Cargo and service companies

For cargo companies, the shipping lines are probably the most important partners. Shipping lines very often determine into which port the big ocean container ship from Asia goes. In the Baltic Sea there are ports like Gdansk or St. Petersburg, in which ocean ships regularly visit, and for that the necessary minimum amount of goods in containers is needed (approximately 10 000 TEU per ship). If volumes are smaller, the cargo companies have to use smaller ships (feeders) to transport products from ports visited by ocean ships to smaller ports with much more limited trade flows. In the Baltic Sea all five large and well-known shipping lines are represented. Important partners are the operators of container trains (directions of Russia and Ukraine), but the practice in this type of connections is different for various type of cargo companies.

The subsidiaries of big international companies also benefit from the connections with a big international mother company. DSV, for example, has central procurement in Denmark, which gathers the information about the volumes of flows and negotiates with shipping lines. DSV aims to find for its clients the best possible solutions and to offer the best price-quality ratio. At the same time, many arrangements are also done locally. Special agreements depending on volumes and the character of clients are done locally. At the Tallinn office, Baltics procurement deals with operations related to Estonia, Latvia, Lithuania, Russia and Belarus. In the case of transit for international companies such as DSV, partners are firms which specialise in purchasing logistics – they organise purchases and transportation for end-customers. If the transit to Russia is the case and there is an intermediate company here, in general, the intermediate company organises the transportation further.

Daily work with the clients is of great importance. The companies see it as positive that in most cases, where a new product flow appears, a thorough tender is organized. The preparations for larger projects last in most cases several years (to take part in tenders). Competition is also often related to the client communication, since prices and services are relatively similar among competitors. The prices are of essential importance for clients but if the price gap is very low, there are other aspects which play a great role: client relationships, knowing the client and the habit of working together.

The companies in this subsector are also members of different international organizations and visit their events. The companies are members of different logistics networks: Multiport Ship Agencies Network, Project Professionals Group, the Worldwide Project Consortium Ltd, Advanced Professional Logistics Network, China Global Logistics Network, WCA Projects Network, Estonian Chamber of Commerce and Industry, Estonian Defense Industry Association, and Estonian Logistics and Transit Association.

Development of new technical solutions is an important reason for contacts. The companies located in Estonia, which are subsidiaries of big global multinational companies (such as DSV and CSF), very often use technical solutions developed inside the mother company. For independent companies with local ownership, as Transiidikeskus, contacts with Finland are important in the field of

technology. Chargers are bought from Finland and also software is bought through Finland. The company values the Finnish know-how in the field of technology and equipment and uses the services of Finnish consultants as far as the application of technology is concerned. In Finland there are technology consultancy firms which offer the option of simulations. They work internationally and have great experience in this field.

Furthermore, the companies cooperate in the field of environmental issues with companies in the field. They have already ISO9001 certificate and some companies already have certificate of 14000 or are applying for it.

3.3 THE FUTURE OF THE ESTONIAN MARITIME CLUSTER

Based on the survey results, the main challenges of the Estonian maritime cluster are related to the availability and increasing cost-levels of skilled labour. The strengths, in turn, include competitively priced products and services, fluent cooperation in value chains, as well as solid experience and established practices in the specialization areas.

To support the competitiveness of the Estonian marine sector, a particular development plan foresees the creation of the Estonian maritime cluster. Regulations and framework are provided by the Ministry of Economic Affairs and Communication, funding by Enterprise Estonia, and the partners include companies from different industries. There should be working groups inside the cluster, and if some position or policy proposal is made, it has been negotiated and discussed inside the cluster and there is a common understanding or support of a particular position. The national cluster could be a basis for the Baltic Sea regional cluster. The common evaluation of regulations, but also preparation of joint business projects, could be among the tasks of this cluster.

The shipbuilding companies and other providers of different services foresee that they have to improve the quality of their human resources by employing more engineers and fewer workers. The companies have to develop their qualities in order to produce more sophisticated products. Companies also try to become more international and widen their business activities into other countries. One issue for a shipbuilding company providing services for wind farms has been that the company is providing services in territorial waters of different countries and every country has a specific regulatory framework for that. If these regulations will be harmonized, the company´s activities would be easier to organize.

Competition offered by Russia will increase. Ust-Luga is becoming the second port in the Baltic Sea. Their long-term strategic aims (in the strategy of port development) are to divert the transit from Finland, Latvia, Lithuania and Estonia through their ports. The efficiency should be increased to compete with Russian operators. At the same time, political factors should be considered as important risk factors. If Estonia and Russia sign and adopt the border agreement, that will be a positive signal also for business activities. The positive developments of interrelationships between the EU and Russia will also create positive impacts on larger trade flows through Estonian ports and more turnovers for cargo and shipping companies.

Risk factors are also unexpected changes in the field of taxes and fees. Several steps of the state have not been very well argued and rational, for example the increase of navigation fees for water

transportation and the purchase of an ice breaker. The decisions were political, and there was very limited analysis of different options and business possibilities for an ice breaker. The Ministry of Foreign Affairs provided, at the same time, good examples in the professional representation of the interests of the sector in other countries. The ministry has been very helpful in advising in visa issues, providing necessary contacts in foreign countries and organizing support through embassies of other countries (the EU, first of all), when Estonia did not have an embassy in the country where the problem occurred.

A good outlook for the future is that the share of goods transported in containers is increasing. It is more environment-friendly and makes it possible to use harmonized technology for treatment of product flows.

The cooperation of clusters of the Baltic Sea is perhaps possible in the field of research and development. In fact, there is potential for cooperation between competitors in the field of market surveys. Through cooperation, it could be possible to direct flows to the Baltic Sea. The sulphur directive is one example in which measurement of impacts has been limited and critical comments and suggestions were made only afterwards. There has been a real need for cooperation and joint lobbying on the regional level.

The sulphur directive has different impacts. It occupies a very limited area – the entire Baltic Sea and the southern region of the North Sea – while it does not concern other seas. In addition to this, there are still the United States and the Canary Islands, which are not important for the Estonian shipping companies. Due to the sulphur directive, ship-owners are on very unequal terms: in the Mediterranean you can use high-sulphur fuel and it is also possible to go in such a way from the English Channel. This means that the transportation prices of the Estonian companies will increase which reduces national competitiveness. Especially the Finnish companies are worried because Finland's exports and imports are mostly transported by ships whereas Estonia does not export as much. When transport costs increase by 25% for one ship owner, it will be more expensive for all the ship owners in the region. The shipping companies cannot take care of these costs for themselves but instead they have to shift these to the consumer. It is possible that some of the material flows will switch to roads. From Estonia you can drive to other parts of Europe through Latvia, Lithuania and Poland. It will be calculated whether it is cheaper by land or by sea to Gdansk, and then the owner has to decide. It is more difficult for Finnish transportations as they are not going to be driven through Russia.

The impacts of the sulphur directive are as follows: firstly, the purification changes the construction of ships, if scrubbers will be used. Secondly, air will be cleaner but these equipment use sea water and thus there will be a problem of waste management and a need for special infrastructure in ports to process this waste. If freight prices increase due to these special requirements, there is a need for more bunkering which takes time and creates extra costs for shipping companies. The demand for sea transportation will decrease and truck transportation on roads will become more competitive from Western Europe. On the other hand, an opportunity for shipbuilding companies is that a lot of old ships will go out of use and there could be additional demand for new ships. The new environmental regulations will also make services more expensive. For example, ships should not use their own engines to produce electricity if they are in a port but to take electricity from a port.

This requires new technical connections which a port has to provide. It creates extra costs for ports and the issue needs to be solved together with local authorities and specialized companies.

Another issue of crucial importance is the maritime education which has to be improved. Maritime education has been underfunded for many years and important subjects such as fish processing, hydrography etc. have been missing. The merger of Estonian Maritime Academy with Tallinn University of Technology has been a good decision but it is just a starting point for the further improvement of the marine education.

SUMMARY OF THE ESTONIAN MARITIME CLUSTER

1. Regarding the cooperation of Estonian maritime companies in general, the most important forms of inter-company cooperation are exports and other international operations, marketing, and education and training.

2. The main challenges of the Estonian maritime cluster are related to the availability and increasing cost-levels of skilled labour. The strengths, in turn, include competitively priced products and services, fluent cooperation in value chains, as well as solid experience and established practices in the specialization areas.

3. Governance and policies related to maritime issues need to be developed in Estonia.
    - The national maritime governance is dispersed to all ministries and thus an overall picture of the sector is missing.
    - Estonia should also have a stable transit policy.

4. Development of R&D activities is needed, for instance help in finding suitable partners. There is also potential for increased cooperation in that field. There is limited research related to e.g. ships and shipbuilding principles.

5. Marine education needs to be coordinated and university studies are specialized and too narrow.

6. The quality of human resources needs to be improved, for instance in the shipbuilding sector by employing more engineers and fewer workers. The companies also need to improve their qualities in order to produce more sophisticated products, increase the importance of life-cycle services, and engage in closer cooperation with clients in different fields and geographical regions.

4 THE FINNISH MARITIME CLUSTER

By Annemari Andrésen, Jenni Junnelius, Eini Laaksonen and Hanna Mäkinen

4.1 MARITIME CLUSTER NETWORKS

The case companies' views on the level of networking of the Finnish maritime cluster vary a lot, ranging from seeing it as a good and functioning network of companies to not recognizing the existence of the whole cluster at all. When looking at the various sectors of the maritime cluster, the cooperation networks in marine industry were found the best-developed. This was mostly seen to result from the long history of the Finnish shipbuilding industry due to which there is a long tradition for cooperation. The companies of the Finnish maritime cluster mainly originate from a handful of shipbuilding companies, such as Wärtsilä, Valmet, Hollming, Laivateollisuus and Rauma-Repola. When these shipyards started to outsource their business, a lot of private companies emerged and started to develop. Due to the common roots, cooperation between companies has been rather natural and easy. It was mentioned that as the Finnish maritime cluster includes a lot of companies of different level and size that are not competing directly with each other, potential for cooperation is high. Furthermore, the framework of the Finnish maritime cluster was considered to promote the cooperation between competitors as well, for instance due to well-developed cluster networks and long tradition in common research projects.

In both the interviews and the survey results, the networking of companies was seen in a positive light and to bring benefits to companies. For instance, through cooperating with other companies in various projects comprehensive package deals can be offered to customers and customer needs can thus be better met. Common projects often give foundation for R&D cooperation as well. All the interviewed companies also acknowledged the need to further increase cooperation and networking in the Finnish maritime cluster. In fact, several companies pointed out that the Finnish maritime cluster has traditionally been very shipyard-oriented. The networks have been gathered around the shipyard, making the suppliers rather dependent on this main actor of the cluster. Deepening the horizontal level cooperation between cluster companies was considered to have great potential. Instead of competing with each other for the yard's subcontracting, partial and turnkey suppliers could gain more by developing the culture of "doing things together". Furthermore, due to the dominant position of the shipyard as the centre of the network the suppliers have not been forced to choose "the hard way" and internationalise but instead have been making profit just by supplying the market nearby, i.e. the shipyard. By supplying other markets as well, such as shipyards in Germany and France, best practises could have been acquired from there and then been utilised also in the operation of the shipyards in Finland. Thus, the competitiveness and international networks of the companies could be stronger now when the future of the shipyard is at stake.

Internationalisation was mentioned as one of the important issue in which Finnish maritime SMEs should invest more. It was also considered to be one of the potential fields of cooperation in which companies could gain from each other's experiences and develop joint ventures to penetrate international markets. In order to reach customers in international markets, the presence of the company there is extremely important. The case companies that operate at an international or even global level often consider the Finnish market too small – for instance for Antti-Teollisuus and Napa, the majority of the customers are situated abroad. In fact, the interviewed companies all have rather

wide international networks particularly in Europe and Asia – some countries that were brought up include Estonia, France, Germany, Lithuania, Poland, Russia, Sweden, China, Japan and South Korea. Cooperation relationships are established with foreign partners as well and for instance ABB, Cargotec, Pemamek and Wärtsilä mentioned that they only aim to find the best possible partner and do not see nationality as an influencing factor in developing partnerships. Nevertheless, for instance Antti-Teollisuus and Napa noted that a similar cultural background and familiar language make the cooperation somewhat easier, and Elomatic and Meriaura mentioned that most of the R&D cooperation, for example, has so far been done with Finnish partners. Based on the survey results, the international connections of the Finnish maritime cluster companies and their views regarding the future are illustrated below.

Figure 7. Location of customers of different maritime sectors

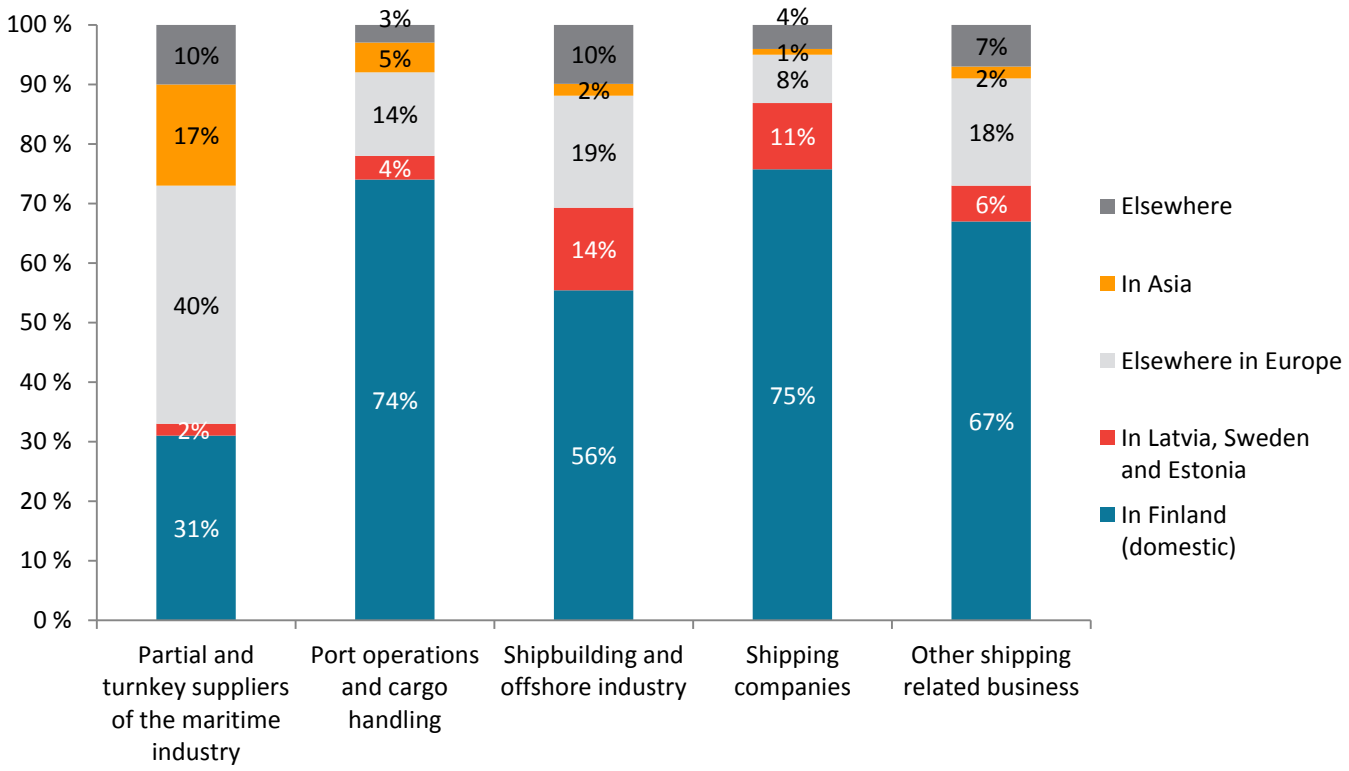


Figure 8. Location of suppliers and subcontractors of different maritime sectors

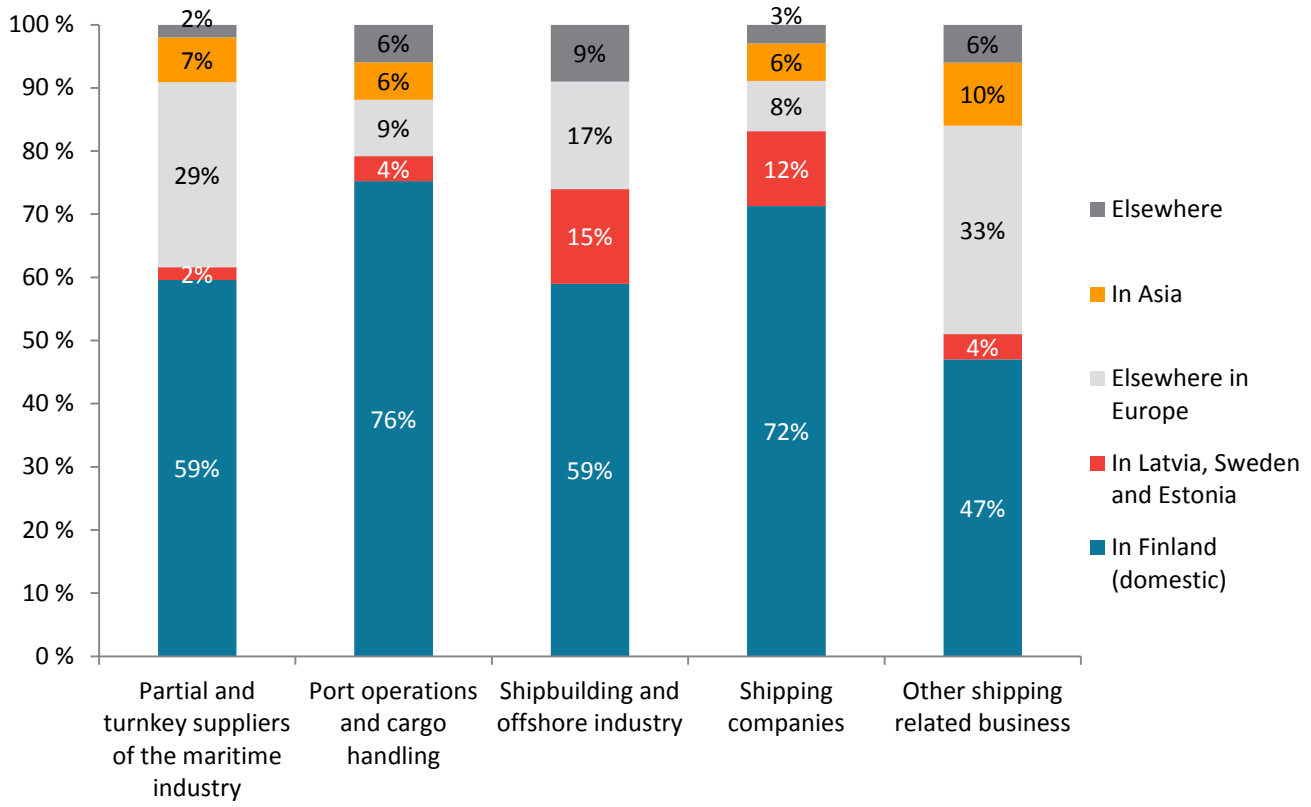
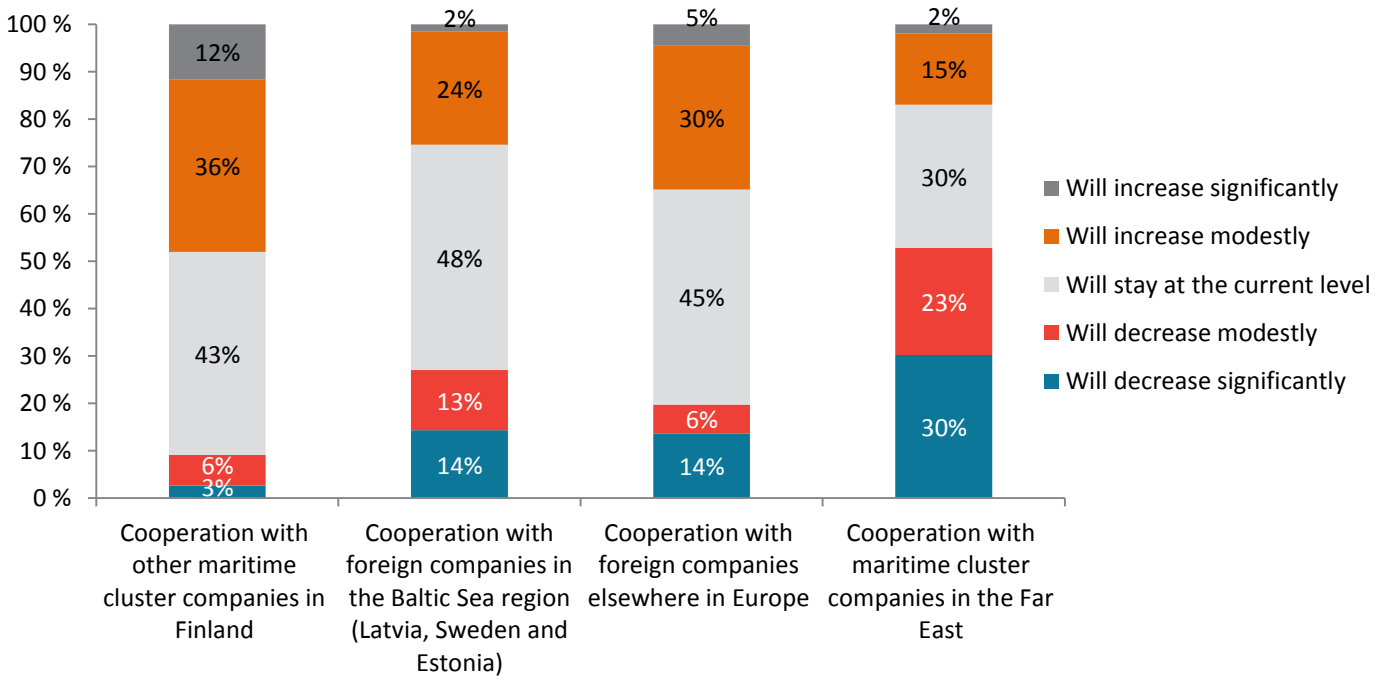


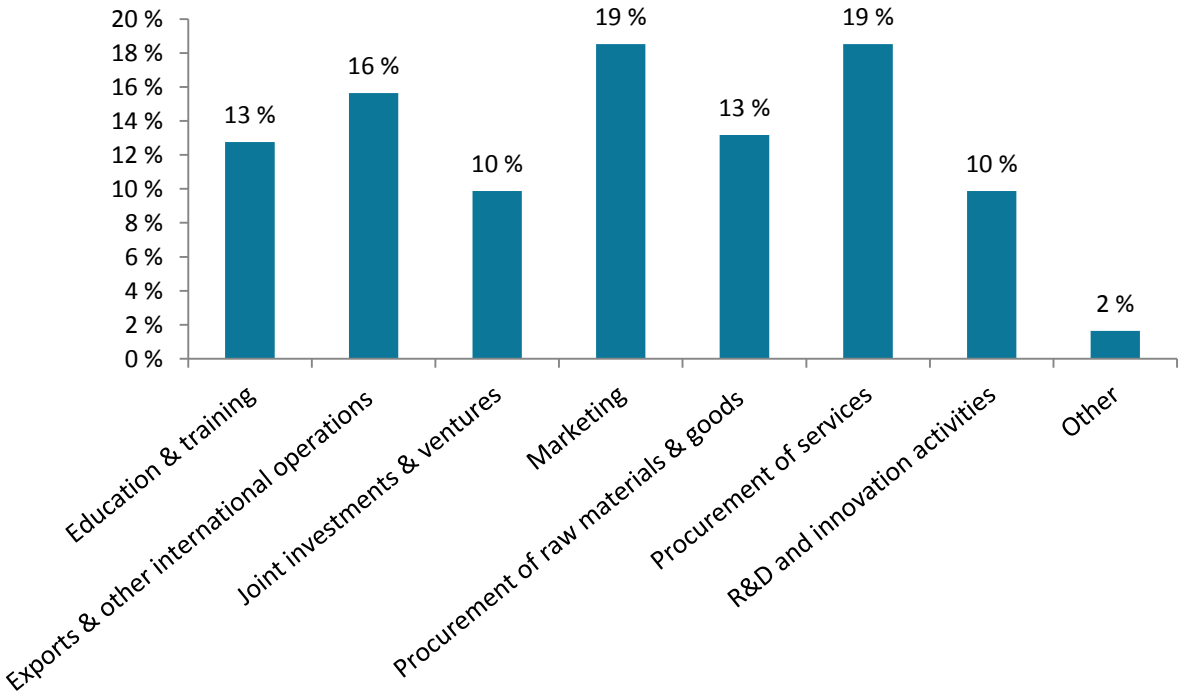
Figure 9. Companies' views on their cooperation networks after 5 years from now



It can be concluded that international activity exists in all sectors of the maritime cluster, also at the CBR-level. In the future, companies expect their networks to remain largely at the current level or see the cooperation increasing, particularly within Finland. Surprisingly, a notable number of respondents expect their cooperation to decrease with the maritime clusters in the Far East.

Companies cooperate with their partners in various ways. Cooperation takes place in their own value chain, for instance with subcontractors and customers. In addition to these vertical cooperation relationships, also horizontal partnerships exist, either with other companies that are not directly involved in the same businesses or with competitors. Subcontractors of the shipbuilding industry are in general rather well networked and cooperation takes place among companies from various fields, such as machinery and equipment manufacturers, design and engineering companies and software development firms. Shipyards are also actively participating in various projects with the partial and turnkey suppliers – for instance, STX Finland and Wärtsilä are developing scrubbers together. Several interviewed companies, such as Cargotec, Napa, Pemamek, STX Finland, Technip and Turku Repair Yard, highlighted the active role of the customer in product development and the tailoring of products and services for customer needs. Based on the survey results, the most important forms of inter-firm cooperation are marketing, joint procurement of services, and international operations (Figure 10).

Figure 10. The most important forms of cooperation with other companies



Taking the focus of cooperation outside companies' own value chains, that is away from their customers and subcontractors, the Finnish maritime cluster companies cooperate rather varyingly at the horizontal level. Within the interviewed companies among the partial and turnkey suppliers of the maritime industry, for companies such as Elomatic and Wärtsilä, horizontal cooperation is a necessity. ABB and Cargotec also consider it very important and would like to increase such activities, but in the world of limited resources, companies often tend to invest in optimizing their

own value chain operations. For instance, Cargotec pointed out their interest in further developing cooperation with global high-technology companies, particularly in terms of international marketing operations. From the national perspective, it would be reasonable to boost also other Finnish top-class companies and even offer joint product and service packages through some kind of a joint marketing organization, thus saving efforts from everyone. However, although cooperation within these global companies does exist, some companies mention that the problem in increasing it often lies in the pride of large companies that do not adequately respect the other actors' knowhow. In addition, and perhaps as a result, the global companies do not have a regular forum for joint discussion and cooperation takes place mainly on the basis of personal relationships.

As regards the suppliers' cooperation with their competitors, i.e. coopetition, most of the interviewed companies were involved in such activities as well, more or less actively. Coopetition often stems from customers, and for example Antti-Teollisuus, Elomatic and Napa cooperate with their competitors to provide larger sales portfolios for their existing and potential customers. Another trigger discussed was a customer's existing relationship with a competitor, a case in which one has to engage in cooperation with this competitor to succeed in serving the customer. Shared challenges may also lead to inter-competitor dialogue and even cooperation. Competitor compliance, however, is obviously an important matter when discussing coopetition. For instance, Cargotec does not engage in regular cooperation with its competitors as the discussion would easily end up in pricing, dividing projects and other forbidden areas.

When it comes to shipyards, horizontal cooperation is largely focused on various R&D projects. For instance Arctech Helsinki Shipyard, which operates in shared ownership of STX Finland and the Russian United Shipbuilding Corporation (USC), jointly develops steel products with Russian companies that are not involved in Arctech's supply chain. Arctech sees possibilities in increased horizontal cooperation since problems that are topical in shipbuilding industry may have already been solved in the engineering sector. Regarding cooperation with competitors, STX provides a very interesting case. The three STX shipyards Arctech Helsinki, Rauma and Turku cooperate rather actively, for instance in procurement activities. However, within STX Europe and with the French shipyard, for instance, the collaboration atmosphere has recently chilled. Knowhow and information exchange within the shipyards of the same group would be reasonable, but in the case of Oasis of the Seas, for example, the non-disclosure agreement with the shipping company ties the hands of the whole supplier network. Thus, increasing cooperation within the STX shipyards largely depends on customers and their wishes. The cooperation of STX Finland with other shipyards, such as Fincantieri and Meyer Werft, has also decreased during the past few years. Technip and Turku Repair Shipyard, in turn, are not actively involved in coopetition with other shipyards and are connected mainly through personal contacts.

The interviewed shipping companies, Arctia Shipping, Meriaura and Viking Line, all represent rather different fields of shipping and thus presented somewhat differing views on horizontal cooperation. Arctia Shipping, a Finnish state-owned company offering icebreaking and offshore services, cooperates at horizontal level in ship conversion, waste treatment, water consumption, energy efficiency and personnel training. Abroad Arctia Shipping currently cooperates with Swedish icebreakers and is in contact also with some Estonian and Russian shipping companies. Because of competition rules, intensive cooperation with competitors is however rare, although also in the field

of icebreaking there would be potential for more, for instance in the form of joint service portfolios. Another example of Finnish shipping companies is Meriaura, a private company specialized in transporting industrial bulk and raw materials. Meriaura has bravely engaged in innovative development projects and cooperation relationships which have resulted in new business openings and innovative solutions to the existing operations. Consequently, this company also highly supports the pooling of actors that can together sell larger packages. The third shipping company Viking Line, in turn, is not involved in coopetitive relationships. The company operates in cruise business and because of the strong brands that the customers in this business value, competing brands should not be mixed through cooperation. Competition rules also strongly limit the opportunities, and for instance with the Estonian competitor Tallink, Viking Line only communicates in social events. Thus, the cooperation activity of the shipping companies largely depends on the sector and on the cooperation opportunities that there are within the limits of competition rules.

Ports, in turn, depending on their specialization, compete for material flows but at the same time actively cooperate with their counter ports. Finnish ports actively discuss joint issues particularly through the Finnish Port Association, which takes things forward when needed. Port directors meet at regular meetings and share information and seek for advice also through personal contacts. In addition, Finnish ports have ongoing joint projects, such as HaminaKotka with the ports of Rauma and Pori concerning IT developments. There are also international development projects and various international associations (e.g. the International Association of Ports and Harbors, European Sea Ports Organisation, Baltic Ports Organisation and Trans-European Transport Network [2]) through which ports cooperate. For instance, the Port of Helsinki actively cooperates with the Port of Tallinn in enhancing the shared freight and passenger traffic, and HaminaKotka does the same with the ports of Lybeck, Hamburg, Bremerhaven and Rotterdam. Irregular benchmarking also takes place within the ports. Regarding other cooperation networks, ports have tight partnerships with port operators and shipping companies.

When it comes to triple helix cooperation, its scope, frequency and content depends on the field of operation and the product and service offered, and some interviewees find it more useful than others. Most of the interviewed companies cooperate, at least to some extent, with Finnish universities, particularly technical universities such as Aalto University of Technology, Lappeenranta University of Technology and Tampere University of Technology, and research institutes such as PBI Research Institute and VTT Technical Research Centre of Finland. Some cooperation has also been done with business schools but it was mentioned that this field could have potential for increased cooperation. Cooperation with universities is mainly related to various R&D projects, reports and educational cooperation, bringing companies concrete benefits such as contributing to development of new products and to finding competent employees, as well as more abstract advantages such as helping them to understand the problems of the industry and to see the “big picture” clearer. Some criticism was also raised – the substance and business-orientation is in general missing from the research projects and research is sometimes done just for the sake of research, or in order to get funding and employ people. Companies highlighted that as their resources are limited, the research

[2] For information about TEN-T, please visit http://ec.europa.eu/transport/themes/infrastructure/index_en.htm.

cooperation in which they are involved should be market oriented, company-led, and aim at concrete results that bring benefits to companies themselves.

Besides universities and research centres, companies also cooperate with other public organisations, for instance funding organisations such as Finnvera and the Finnish Funding Agency for Technology and Innovation (Tekes) within various R&D projects, and Finpro which offers internationalisation support. In addition, other organisations and initiatives were mentioned, such as Finnish Metals and Engineering Competence Cluster (FIMECC), the Centre of Expertise Programmes (OSKE), and Offshore Technology Center (OTC). For instance, Innovative Finnish Business and Product Concepts for Offshore Industry (IFCO) project was seen as a fruitful attempt to bring together companies operating at the offshore sector but in the future such initiatives should focus more on customer orientation and how to best meet their needs. Regarding ports, a large share of cooperation is done with various ministries, municipal administration, and authorities, such as Finnish Customs and the Border Guard. Maritime companies also participate in various interest groups, for example ports in the Finnish Port Association, shipowners in the Finnish Shipowners' Association and shipbuilding industry in the Finnish Marine Industries. These associations are seen to offer a discussion forum and a platform for cooperation for companies operating in the same field, to protect the members' interests and to practise political lobbying.

4.2 BUILDING PARTNERSHIPS

When it comes to the birth of a cooperation relationship or even a partnership, most of the interviewees stated that the process is more of an emergence rather than a systematic process. As one of the interviewees put it, the formation of such a business relationship is pretty much like finding a wife or husband – at some point you just meet someone that you want to engage with. In addition to the existing contact networks, company representatives meet each other in various forums and get new contacts through active sales and marketing operations. Third parties may also initiate the relationship – as mentioned earlier, a mutual customer may encourage its suppliers to collaborate to better serve the customer. In addition, individual projects may result in companies noticing that there would be potential to continue joint activities. Largely based on "a gut feeling" and personal chemistry as well as the expected benefits, the parties may end up in establishing a horizontal cooperation relationship.

When it comes to establishing cooperation relationships with competitors, the process seems a little more systematic and requires more consideration. If cooperation with a competitor fits the company strategy and is expected to result in increased profits, a company may accept the cooperation proposal, or if originating from its own initiative, start the search for a potential partner. It was brought up that the optimal candidate can sometimes be found outside the traditional "old boy network", so one should try to be open-minded. Nevertheless, it was pointed out by one of the interviewees that at the end it is a question of corporate culture, communication and chemistry between the contractors and the operative staff that matters – the positioning as competitors is not the hinge that determines whether a cooperation relationship with another company will be established or not. Other criteria brought up by the interviewees included similar operations models, shared views, and mutual will to influence the same issues. Also equality as well as complementary skills, resources and geographic presence constitute the basis for cooperation.

Good relations naturally constitute an important part also in a coopetition relationship, even though a competitor always is a competitor. The success of a relationship is highly tied to trust, which develops through open discussion, also on challenging and disagreed issues. Several interviewees referred to the envious and suspicious nature of Finns, which often hinders the formation of fruitful cooperation relationships – sometimes companies tend to fear that the other party will benefit more of the relationship. Such moping can be avoided by clearly identifying the value of the relationship to both partners, and by together deciding on the rules of the game. Winwin-opportunities are real, but their realization requires courage and trust. Interviewees agreed that trust in another company can be lost only once as it is very difficult to rebuild.

The success of a relationship depends also on financial results, and if there are no (expected) benefits of maintaining and investing in it, there is no reason to continue. On the other hand, however, the factual issues have to be very impressive for the relationship to continue if cooperation at the interpersonal side does not work. The risks have to be truly shared, and the cooperation needs to be fluent. Furthermore, the expectations of the relationship need to be ambitious but realistic within the given timeframe. The benefits of horizontal cooperation are always linked to the increase of sales and profit, for instance through joint R&D, sharing labour and other resources, and even getting access to new customers through the partner company. Particularly for small companies it is reasonable to join their offerings to provide more comprehensive packages of goods and services to the customer. In addition, sometimes the partner organization can be the customer's preferred partner, through which the other one can get an access to tacit knowledge related to the customer's preferences, for instance.

Most of the risks of engaging in a cooperation relationship can be avoided through agreeing on the rules of the game beforehand and supporting the agreement with proper contracts. Thus, the interviewees did not see the leaking of knowledge as a significant risk, even when cooperating with competitors. It is very important to clearly define the areas of cooperation, referring also to competitor compliance. Some interviewees had, however, experienced disloyalty and misuse of shared resources in their earlier relationships. A significant size difference can also be problematic if the bigger partner requires the smaller "to meet them at more than halfway". Within an individual company, a problematic issue can be the organizational culture – the personnel should suddenly engage in cooperation with a company and people that used to be, and still are, "on the other side". Also the customer may experience downsides in supplier cooperation, for example through communication difficulties as the cooperating companies are not experts on each other's products.

All in all, horizontal cooperation, even with competitors, can thus result in more revenues and increased profitability and efficiency – a more competitive package. Despite the risks discussed, the interviewed Finnish companies were in general interested in increasing collaboration with companies outside their own supply chains. However, due to limited resources, they tend to focus on their existing networks and often wait for others to take initiative in proposing collaboration.

4.3 THE FUTURE OF THE FINNISH MARITIME CLUSTER

The Finnish maritime cluster is facing significant challenges due to increasing international competition and the tightening of environmental regulations, creating challenges for the single actors in terms of cost efficiency and profitability. Based on the survey responses, the main

challenges for the shipbuilding industry are high labour and production costs, the availability of skilled labour, and getting funding to investments and innovation activities. For the shipping companies, the main challenges include the sulphur directive, the prices of fuels and raw materials, and again the high labour and production costs. Consequently, the high cost-levels in Finland are among the top priorities to be dealt with. Regarding the strengths, in turn, the industry side respondents brought up high-quality products and services, close customer relationships, special knowhow, and the solid expertise and established practices. The shipping companies share the same strengths, although having competitively priced products and services among the top issues instead of special knowhow. Consequently, the Finnish maritime companies seem to base their competitiveness on long experience and established practices, and surprisingly few companies had the R&D activities among their top strengths. However, in all the sectors of the cluster, companies recognized the need for increased research and development activities.

The future of shipbuilding in Finland is a topical issue and the question is how and under which ownership the current STX yards will continue their operations, having a significant impact on a number of actors, particularly on the dependent suppliers. The interviewed shipyards, Arctech Helsinki Shipyard, STX Finland, and Turku Repair Yard, consider the Asian production price levels challenging, particularly when they are also stepping up their product development and aim at increasingly engaging in non-standardized vessel production, e.g. cruise vessels and ice-breakers. A great challenge in such a situation is to get the customers to appreciate and pay for the value the Finnish shipyards produce, rather than going for the cheapest price. This value includes top-class design and technical solutions, reliable production work, and training and maintenance services, for instance. To keep up these offerings, the Finnish maritime cluster should focus more on customer-oriented, knowledge intensive service provision, and develop business around the existing competences, i.e. providing broader solution and service packages for example in ship design and shipbuilding.

The suppliers are obviously worried about the future of shipbuilding in Finland, due to the current discussions around the financial problems and ownership issues of STX Finland. Particularly small suppliers operating mostly on the national market consider the present shipbuilding situation in Finland as a serious threat to their business. The local shipbuilding cluster is highly important for the industry's development – without a fruitful breeding ground, small companies do not get to develop, test and take their ideas further. However, some of the interviewed subcontractors brought up the issue of shipyard dependence, which, although providing rather easy profits next door, has been harmful for the industry's development due to the introversion. Companies need varying challenges and experiences to keep their operations developing and to produce state-of-the-art solutions. While leaning on the home-shipyard, many have not gone to look for international challenges and contacts and as a result, the subcontractors are facing serious problems when the source of revenues is going downhill. To keep up the industry's competitiveness, the subcontractors should spread their customer portfolios and take more responsibility for continuously developing their products, whereas the Finnish shipyards are in desperate need of investments in improving their processes, and thereby their competitiveness. For instance, one of the interviewed subcontractors brought up that the shipyard could take more of a coordinator's role in combining the operations of the subcontractors, which again would deliver world's best products and services to the project. This would result in producing the world's best ships. Recently, the problem has been that the mother

company has not invested in the Finnish shipyards and there have been frequent changes in management. If the products and processes are not continuously developed, soon the brand of the top class cruise vessel builder is no longer credible for the customer. In fact, the survey results indicated that the companies feel that foreign ownership, generally speaking, affects the competitiveness of the Finnish maritime cluster negatively.

In general, the suppliers' view on the cluster's future is highly dependent on the type and size of operations of the supplier, and for instance the problems of the shipyard do not present such a challenge to the large, internationally operating companies whose customers and operations are globally spread. However, many respondents indicate that cooperation within the cluster on a Finnish level should be strengthened against competition from neighboring countries. The suppliers consider it important to improve the cooperation within the network they are operating in, in order to make the business more efficient and to optimize processes in their value chain. The future networking challenge lies in identifying the relevant networks and in finding enough resources to engage in operating in those networks. In fact, the interviewees consider it highly important that the companies would form a dynamic group of actors, a pool of expertise, which could quickly respond to various customer requests and offer comprehensive service and product packages to project biddings. Customers would not need to find every subcontractor separately, but with "just one call" they could get the whole solution package. Mr Viitanen from Cargotec pointed out that such a group could even have a joint sales organization of some kind. In international projects such an active network with a certain contact point would be very important – for instance in China, if the country at some point ends up in loosening cruise visa arrangements. This would blow the demand for cruise ferries, and most likely the Chinese government would want to have the ships built at local shipyards. Then, the Finnish maritime cluster should have an existing network of state-of-the-art product and service providers to take this opportunity, and moreover, an existing presence in the Chinese market. Mr Viitanen states that one of the reasons for Cargotec's success in the Asian markets has been the early presence in the target market, close to the customer. Same kind of joint arrangements are essential also in getting in the Russian and Brazilian maritime projects, for instance.

Some suppliers also feel that Finnish companies could cooperate more to help each other in the internationalization processes. For instance, the process of small companies entering international markets in the footsteps of large companies seems to be at infancy in the Finnish maritime cluster, and to avoid the same mistakes, it would be valuable for the smaller companies to hear about the experiences of the larger ones. However, to put it crudely, the main hindrance for this kind of info-sharing – and for other cooperation as well – seems to be the pride of the global-level players and the mutual jealousy and mistrust of the SMEs.

Regarding the future of ports, in turn, Helsinki, HaminaKotka and Turku do not believe in dramatic future changes or increases in volumes but are carefully optimistic regarding the future of their operations. The ports and shipping companies are highly dependent on the development of the Finnish industry and production in Finland, which inevitably have decreased during the past years of economic recession. The interviewed port representatives acknowledge the high number of ports, over 50 in Finland, but also point out that the ports themselves are not to decide which should be the prioritized ones, and they will continue operating according to the market needs if the political

direction for the development of the Finnish port system is not drawn and decided upon. The ports in Finland are going to be incorporated probably before the end of 2015, which puts more pressure on them to become more efficient and will most probably result in centralization and mergers. Kotka and Hamina ports have already merged and Turku and Naantali ports have started discussions, even though they already have quite a lot of cooperation. However, as the interviewed ports are among the biggest in Finland and are located in different areas along the south coast, they consider themselves to be of increasing importance for the Finnish port network in the future.

A potential future development area, particularly for ports, would be the integration of IT systems, e.g. monitoring the transportation information on a national level. The current common IT system in place, operated by the Finnish transport agency, is considered useful, but is mostly a tool for authorities. However, all the logistics companies have their own global systems that build up their competitive advantage and it might therefore be difficult to get them motivated to participate in such a project. From the ports' point of view, it is still worth looking into. Increased automatization is mentioned as one specific action to make the port operations more efficient. Another development area for ports is to create a customs free harbor area with an attractive package of services for ships and passengers – in addition to locational advantages, ports should find new edges to compete with. For instance in the Port of Turku, facilities have been significantly expanded for this purpose.

Market developments supporting cooperation

Regarding general suggestions for areas of cooperation, Mr Heikinheimo from Napa brought up the concept of natural needs, which should be the focus of development instead of artificial needs or trends. For instance, optimizing the logistical chain, such as the number and role of ports, cargo handling and automation, is in continuous need of improvement and would benefit all the related actors. Another inevitable area that requires cooperative actions is the upcoming SECA regulations. Although the resulting increases in shipping costs are a worrisome issue for the Finnish industries, most of the interviewed companies, even some shipping companies, see it as a push towards developing solutions which will pay back in the long-term. The sulphur directive taking effect in 2015 is obviously a big challenge for the shipping companies, causing rises in costs and creating demand for new business models, but it should be considered as an opportunity to develop the related solutions before the actors outside of SECA 2015 seize this opportunity. Most suppliers and even some shipping companies see this as an opportunity to develop new technologies and new solutions, e.g. scrubber technologies developed by Wärtsilä and new fuel solutions developed by Meriaura. Another issue related to the SECA regulations is the development of an LNG network, and for instance ports request development projects around LNG in the Baltic Sea region. An LNG terminal network should be established in Finland as running on LNG is a good choice in the long run. Moreover, most companies are aware of the fact that in the future sustainable, energy-efficient and environmental-friendly solutions are of growing demand, and proactivity requires both long-term business development plans and operations that not only meet the current regulations but are already one step ahead. The interviews as well as the survey responses indicated that the Finnish maritime companies clearly have acknowledged a high development and business potential in cleantech and offshore sectors, e.g. in the form of sea wind power production.

Several interviewees also brought up the potential related to the Arctic maritime and offshore projects. Finland has long experience and substantial know-how in this field and currently exports

the Arctic expertise. Providing Russia with ice breakers and ice breaking services, for instance, provides great potential for companies such as Arctia Shipping. Mr Vauraste calculates that in 20 years' time, the need for new ice management ships is some 30–50 vessels. Designing, building and operating all these ships will result in a yearly turnover of approximately one billion euros and yearly employment for some 4000 people, for 30 years. Mr Vauraste points out that Finland should now take this opportunity and take the role as the world's best ice-management solution provider – someone is going to take that role in this growing market anyway. At the same time, a strong and dynamic network including ice management, shipbuilding, designing, operators and service companies, should be established so that this expertise could be sold to foreign customers as full solution packages. However, in addition to these so-called emerging sectors, the traditional cruise vessel orders and domestic shipbuilding continue to be of great importance to the Finnish maritime cluster.

Regarding potential market areas for the Finnish maritime knowhow, the potential of Russia was brought up by several interviewees; the growing market provides business opportunities for suppliers, shipping companies as well as ports. Russia is actively expanding and developing both its own shipyards and ports. They compete against their Finnish counterparts, but particularly in shipbuilding, the Finnish actors should engage in this development to gain ground in the market. Particularly Arctic shipping and offshore projects are considered as potential areas for cooperation between Finland and Russia. Regarding transit traffic, in turn, an increasing volume of cargo will be shipped directly to the port of Ust-Luga in the future, but the Finnish ports and transportation infrastructure are still likely to have their share of the business, together with the Baltic States. The Finnish ports are well prepared to handle even more cargo and many of them are developing the related solutions. For instance, the Port of Turku and its partners are planning to start a weekly trailer train connection to Moscow in order to handle transit traffic through Finland to Russia more efficiently.

However, there are also challenges in further engaging in the Russian market. From the perspective of ports and transportation companies, inefficient customs create bottlenecks, and from the suppliers' point of view, the unfamiliar business environment, corruption and bureaucracy are mentioned as hindrances for entering the Russian market. Many of the interviewees acknowledge that cooperation with Russian companies should be increased but as the Russian maritime cluster is not well organized, it is also difficult to find suitable partners to work with. Thus, particularly for SMEs, great effort is needed in order to create fruitful relationships with Russian maritime companies. As a consequence, companies often consider it easier to fly over Russia to the booming Asian markets, although the country next door is providing opportunities as well and developments in which it would be very important to be involved.

Public actors' support

Companies pointed out that more support should be directed to internationalization and innovation activities. It was also brought up by several interviewees that the forest of various support systems is too complex. The application and execution processes of development and internationalization projects were mentioned being currently very bureaucratic and complicated. Easier systems and procedures would encourage actors to initiate combined projects and thus boost cooperation within the cluster. Furthermore, as particularly SMEs have limited resources to allocate to paperwork,

easier application processes would increase their possibilities to apply, for instance, for Finpro's internationalization support. In addition, Tekes-financed development projects should be more focused in order to bring practical benefits for individual companies, as well as for the whole cluster.

Publicly funded research projects, on the other hand, received criticism for being contentually overlapping without concrete goals. In fact, a clear majority of the survey respondents indicated that the public R&D funding has not advanced their innovation activities. Companies pointed out that they have limited resources to participate in research projects and hoped for coordination to eliminate overlaps and improve the usability of results. Moreover, projects should aim at concrete results that increase companies' profit, not just at producing some fancy research reports. The state could also support the cluster for instance by raising the financing percent of Tekes projects for some years to boost the R&D activities in the maritime sector. Furthermore, financing should be allocated for international R&D projects as well, as particularly large companies have significant R&D activities abroad.

Concerning the state's role in supporting the maritime cluster, it was also mentioned that more attention should be paid to the timing and targeting the state's investment needs, such as ordering of ice-breakers and military vessels. Thus, for instance shipyards could receive orders from the state during economically difficult periods. Moreover, it was pointed out that tendering processes of public procurements should not always aim at finding the cheapest supplier or service provider but a certain part of the public procurements should be reserved for funding innovative solutions. Adopting regional life cycle thinking, i.e. supporting projects that will remain in and bring advantages to Finland, for instance in the form of employment effects, was also considered important. Furthermore, the importance of being at the forefront in adopting new technological solutions was highlighted – they should be first developed and tested in Finland and then imported to other markets. As a negative example, Napa referred to the fact that an electronic logbook has been introduced in several countries but in Finland a paper logbook is still in use. In addition, investing in developing an LNG terminal network was considered as an important step to take now, particularly due to the soon tightening environmental regulations.

Promoting the dismantling of trade barriers and supporting the interests of the Finnish industries in international contexts were also seen as an important responsibility of the state. In addition, ports requested a political decision on preferred ports to allocate state financing and investments and to create more focused development aims for the port network. It was pointed out that in Sweden this kind of political-level decision has already been made. Currently all three interviewed ports are given a preferred status from the EU, which is the only measurement for port prioritization in Finland.

Defining common challenges to be addressed together and initiating new radical projects were seen to contribute to increasing cooperation and to strengthening the networks among companies and other actors of the maritime sector. Developing "the Arctic corridor", a transportation route from Southern Finland to the Arctic Ocean, was referred to as an example of such radical openings through which various actors could strive towards a mutual goal. Moreover, to get companies meet each other, various networking events were seen as an important and useful means for sharing information among companies. However, in order to make most of such events, they should be targeted for a focused group of companies among which there would be natural possibilities for cooperation. In addition, increasing the attractiveness of the maritime industry was considered as an

important task for both the public actors and businesses in order to keep the best experts in Finland and keep the industry's development going in the future as well.

Views on the Central Baltic region maritime networks

When it comes to the discussion on the CBR-level maritime networks, such connections do exist, for instance through cross border ownerships, BLRT as a case in point. Cooperation could be further increased for instance within repair yards, which could together form service packages that would attract shipping companies to dock in this region instead of the Asian shipyards. In practice, yards would have room for joint operations in LNG conversions and ballast water treatment, for instance. In addition, there is potential for increased cooperation among the CBR ports and the actors along the transportation chain, such as shipping and freight forwarding companies. However, the fierce competition between shipping companies and competition legislation strongly restrict their practical possibilities for mutual cooperation, and hence the greatest potential lies in vertical level cooperation.

Regarding suppliers of the maritime industry, in turn, the potential for increased cooperation at the CBR-level is considered marginal, particularly by global level actors, such as ABB and Wärtsilä. Most of the companies do not see specific needs to increase cooperation in this very region, or cannot define what kind of cooperation opportunities there could be. What the CBR maritime cluster implies is difficult for individual companies to define and many of the interviewees were not familiar with the maritime clusters of Estonia and Latvia, but instead had rather good knowledge on larger clusters even further away. Nevertheless, the largest cooperation potential in the CBR region from the suppliers' point of view stems from joint production activities, the Baltic clusters providing a source of cheaper components and possibly also cheaper production and labour. The costs of labor are somewhat lower in the Baltic States but otherwise the benefits of the CBR cooperation are not very clear to the Finnish interviewees.

The greatest challenge in supporting the CBR cooperation seems to be simply the lack of knowledge on possible opportunities, thus requiring openness and more fluent information sharing with other countries. In addition, many of the interviewees stated that including Russia as well as Lithuania and Poland in this group would result in much higher potential for new forms of cooperation. Namely, it was brought up that in the Baltic Sea region it is Russia that currently provides the greatest market potential for the Finnish maritime industry. Along with that, also the Barents region in the North was mentioned as an interesting future area of international cooperation.

The interviewees acknowledge that the Finnish market is in many ways too small market area in today's globalized world, and that joint international operations are needed to guarantee the future competitiveness – international learning experiences and contacts are essential for a cluster's development. However, some of the interviewees discussed the need for national selfishness, for instance regarding selling the Finnish state-of-the-art design and knowhow to competing shipyards abroad. Nevertheless, that way these companies can learn from other shipyards and again bring their experiences and developed products back to the use of Finnish shipyards. Although supporting the business of other Finnish companies as a group is important, it is going outside one's comfort zone that results in innovative development. Focusing on increasing customer value – value for various customers preferably – is among the key sources of competitiveness.

SUMMARY OF THE FINNISH MARITIME CLUSTER

1. The cluster benefits from a long tradition of cooperation. The shipyards have been the center of the networks, providing a lot of work for the subcontractors but at the same time hindering their international activities and learning.

2. Vertical cooperation within supply chains is fluent, but there is plenty of room for horizontal cooperation. Such culture is not very vivid in Finland due to the independent nature of global-level companies and the envy of smaller ones.

3. Examples of smart business moves include brave internationalisations, establishing various service offerings to supplement the actual product sale, and outsourcing the unprofitable domestic production while focusing on developing the core competences and customer relationships.

4. Recommendations for companies
   - SMEs should follow global companies in going international
   - Companies should boost each other's expertise, particularly in international contexts
   - Instead of each focusing on one's own business only, join forces to provide customers a full package of solutions, particularly in international markets
   - Focus on developing customer value, with the customer
   - Focus on natural needs, e.g. improving the effectiveness of the logistics chain
   - Increase specialization and develop knowhow, related to e.g. cleantech, Arctic and offshore sectors
   - Let go of old operations models and continuously aim at improving products and processes – that is the only way to keep up the brand

5. Recommendations for research organisations
   - Research projects should aim at concrete, profit-increasing objectives
   - Coordination is needed to avoid overlapping projects and to better communicate the results to the industry
   - More financing needed e.g. to international R&D

6. Recommendations for authorities and other public actors
   - Support SME internationalization and innovation activities
   - Simplify the support systems and reduce the related bureaucracy
   - In public procurements, consider the product's life cycle value for the region, and choosing innovative offers instead of the lowest-priced
   - Invest in education and the image of the Finnish maritime sector
   - Provide radical initiatives to support cooperation, e.g. the Arctic corridor
   - Arrange targeted networking events

5 THE LATVIAN MARITIME CLUSTER

By Aldis Bulis

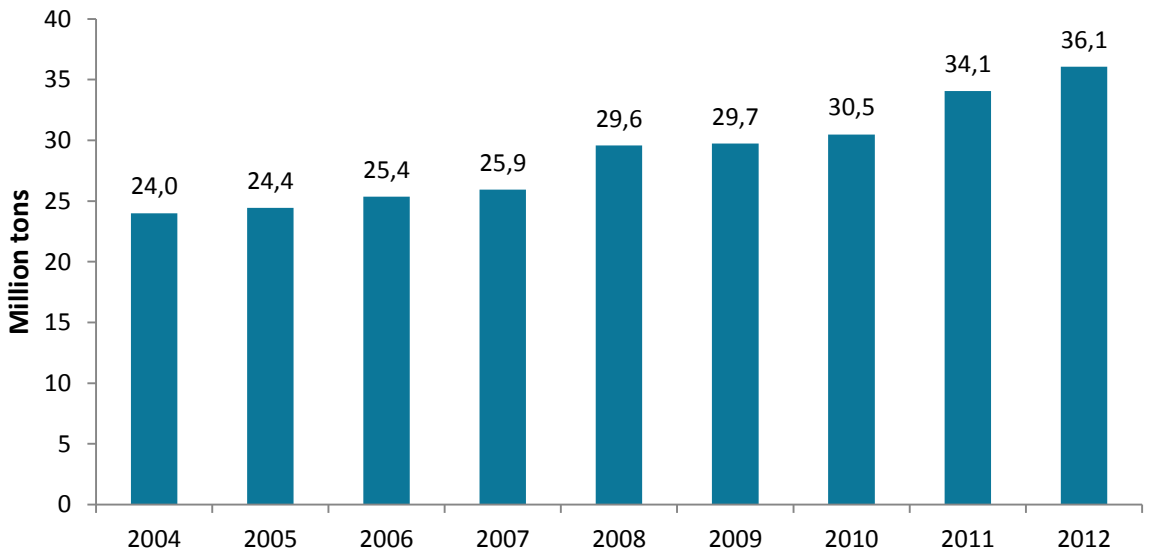
5.1 MARITIME CLUSTER NETWORKS

The Latvian Maritime cluster consists of all types of companies that are characteristic to the maritime cluster. Companies operating in shipping, shipbuilding, shipping equipment, marine equipment, freight forwarding, technical and maritime low services, financial services, investors, ports, stevedoring companies, fishing, dredging, inland shipping, yachting and navy are represented in Latvia. International freight transit transport is significant in Latvia because it provides capacities for the use of transport infrastructure and the development of transport infrastructure in Latvia. The turnover of Latvia's seaports is approximately 89% transit freight, and approximately 97% of all transported freight carried by railways through Latvia territory is transit freight, mainly from Russia and Belarus via ports of Latvia (East–West transit corridor dominates) (Bulis et al. 2012).

In Latvia there are three international seaports with wide cargo handling profile (Riga, Ventspils and Liepaja) and seven comparatively small seaports focused on serving of export goods, fishing and providing maritime yacht services. Three biggest ports (Riga, Ventspils and Liepaja) are connected to TENT-T road and rail, as well as two oil and oil products pipelines go to Ventspils. In 2012 these three seaports handled more than 70 million tons cargo (Riga – 36,052 million tons, Ventspils – 30,346 million tons, Liepaja – 7,431 million tons), but 7 other seaport handled 1,364 million tons (the Central Statistical Bureau of the Republic of Latvia). The main shipyards are located in the port of Riga.

The Freeport of Riga has been the largest seaport in Latvia and it has been the biggest seaport in Baltic States in 2012 when more than 36 million tons of cargo was handled (Figure 11).

Figure 11. Volume of handled cargo in the Freeport of Riga, 2004–2012



Source: The Central Statistical Bureau of the Republic of Latvia.

Approximately 20 000 people are employed in the companies operating in the territory of the Freeport of Riga. Contribution of the Freeport of Riga to Latvian GDP has been more than 400 Million EUR in 2012. The main function of the Freeport of Riga Authority is the governance of the Freeport of Riga. It is not engaged in business activities, but companies which operate in the territory of the Freeport of Riga do it.

The Freeport of Riga is involved in different partnerships with state authorities, private companies and academic institutions. Motivation to develop partnerships is to promote long-term development of the Freeport of Riga. For example, project on the Krievu Island is realized in cooperation with stevedoring company. This project provides transfer of port activities (mostly bulk cargo) from Riga city centre to location that is closer to the Baltic Sea. The Freeport of Riga makes environmental improvements at the port's territory according to actual regulations. The Freeport of Riga is developing its relations with non-governmental organizations as well as to find solutions to mitigate air pollution caused by the companies operating at the port. The Freeport of Riga cooperates regularly with higher education institutions, e.g. organizing project competition "The Port for the City" where Latvian students present many creative ideas on how the Freeport of Riga could improve its activities. The seaport has partnership with Riga Technical University in the field of innovations providing development of both partners.

The Freeport of Riga participates in the Latvia's Ports, Transit and Logistics Council that is aimed at the development of the transport industry in Latvia. This Council consists of representatives of the State, ports and municipal councils. The seaport is involved in many associations at the international level (e.g. International Association of Ports and Harbours, European Sea Ports Organization, Baltic Ports Organization) and the national level (e.g. Employer's Confederation of Latvia, Transit Business Association of Latvia).

The Riga Container Terminal (RCT) is a stevedoring company operating at the Freeport of Riga. RCT has approximately 60 employees, as well as uses a lot of outsourcing. RCT has partnerships at all levels that the cluster-based approach offers. RCT is a member of the Latvian Supply Chain Cluster (www.lscc.lv) that is a cluster affiliated with the Latvian Logistics Association and an additional tool for marketing and innovation activities in freight logistics. Membership in the Latvian Logistics Association offers opportunities for joint cooperation with state authorities. The Riga Container Terminal has joint innovations activities with other companies and universities in the Latvian Supply Chain Cluster, but sometimes it has direct cooperation with universities, e.g. providing internships for students and working together with scientists to develop technical improvements in the terminal. Sometimes the Riga Container Terminal has joint projects with its partners from private sector, e.g. RCT and DB Schenker participated in the realization of the first demonstration container block train from the People's Republic of China to the European Union. The train was dispatched from Urumqi station in Western China and travelled 6000 km in 8 days to reach the RCT, and then containers were trucked to the warehouses in Hamburg (Germany). This route is useful for distribution of goods from Western China to Europe. RCT has a lot of cooperation with foreign partners because container transportation and handling are international activities. Many partners come to visit RCT and representatives of RCT do business trips abroad.

The situation of partnerships in Latvia's shipyards is described here analysing the cases of the Riga Shipyard and ME Riga. The Riga Shipyard serves European and Scandinavian customers focusing on

ship repair, conversion and shipbuilding, but ME Riga serves mostly Scandinavian customers (Sweden, Norway and Finland). An important specialization of the shipyards in Latvia is the building of hulls for customers from Scandinavian countries, and then equipment and design are carried out by the main ship builder in Finland, Sweden or Norway. There is a great potential for R&D and joint innovation activities with academic and research institutions in the shipyard sector. For example, ME Riga has this experience – innovation can be very useful but sometimes it is too expensive to be financed. Cooperation with academic institutions sometimes helps to solve technical problems in the process of production.

Among Latvian shipping companies the largest one is JSC Latvian Shipping Company (LSC). It operates globally. LSC owns 20 ships for transportation of oil products and chemical cargo, employing more than 700 professional and highly qualified seamen, mostly from Latvia. Overall LSC employs approximately 760 persons and its head office is located in Riga. In the medium-sized and handy tankers category JSC Latvian Shipping Company is among the leading ship owners in the world, and in terms of transport volumes of petroleum products it is also in a leading position among similar companies in Northern Europe. The total carrying capacity of the LSC fleet is 957 974 DWT and the average age of the fleet does not exceed 6 years. All ships have received ISM (International Safety Management) certificates. LSC has made a great effort to turn LSC into a company that complies with the international good governance standards. LSC supports non-governmental organizations, e.g. it has donated 20000 LVL (28000 EUR) to the public benefit organization "Sabiedrība par atklātību – Delna" promoting transparency and fair competition (Delna is a part of the global network Transparency International). In 2013 JSC Latvian Shipping Company has won the grand prize in the Baltic Market Awards category "Most visible improvement in investor relations". Baltic Market Awards are prizes of the stock exchange group NASDAQ OMX awarded in five categories.

JSC Latvian Shipping Company has partnerships with many academic institutions, including Latvian Maritime Academy, Liepaja Maritime College and Estonian Maritime Academy. The main form of partnership is providing internships in the LSC. LSC is well-known company among seamen not only in Latvia, but also in Estonia, Lithuania, Ukraine, Russia (especially St. Petersburg) and England. LSC has successful cooperation with Latvian Maritime Academy both at the level of higher education and innovations, especially "soft" innovations. Latvian Maritime Academy provides good specialists in appropriate quantity.

KOMIN SIA (KOMIN) is an IT training and consulting company. Deep knowledge of international trade and customs rules was a base for development of professional software, training courses, manuals and offering of consulting services in the customs field. KOMIN's core competence is software development based on deep knowledge and professional expertise in the field of EU customs and foreign trade legislation.

KOMIN provides services in Latvia for the following IT products for logistics service providers, shippers, intermodal transport companies:

- Software for processing of customs declarations according to the EU rules and standards – Eiro Krava;

- Customs operations and cargo processing based on inventory and warehouse management software – Muitas noliktava (Customs Warehouse);
- Inventory and warehouse management software for Excise goods – Akcizes noliktava (Excise Warehouse).

KOMIN is a member of Latvian Logistics Association (www.lla.lv) and uses it as a platform of company's cooperation networks within the maritime cluster. KOMIN does joint innovation activities for software development together with its clients. KOMIN uses commercial contracts as a base for international cooperation. KOMIN is WEBROPOL (Fi) licensed service provider in Latvia. KOMIN has been cooperating with partners from Finland, Estonia, Lithuania, Russia and other neighbouring countries regularly since 1991. KOMIN cooperates with universities or other public organizations directly or via Latvian Logistics Association and NGO-type-of-organisations, for instance, KOMIN takes part in "Career days" events organized by universities regularly.

The Latvian Supply Chain Cluster (LSCC) is a cluster organization in the Latvian transport industry that helps private companies to cooperate with academic institutions and state authorities at a national and international level. LSCC defines itself as a "maritime infrastructure related supply chain cluster". LSCC is affiliated with the Latvian Logistics Association. This cluster is focused on freight logistics, including shipping services. Members of the LSCC are 35 companies and 5 academic institutions. Among companies are logistics companies (expeditors, forwarders, port operators, warehousing companies etc.), academic and research institutions and different support institutions. For the research specializations of academic institutions in the LSCC, please see Table 1.

Table 1. Research specializations of academic institutions in the Latvian Supply Chain Cluster (LSCC)

Academic institution	**Research specialization in the LSCC**
Transport and Telecommunication Institute	Transport and logistics
Daugavpils University	IT innovations in freight logistics, regional logistics
Latvian Maritime Academy	Management of seaports and shipping
University of Latvia (Faculty of Economics and Management)	Cooperation with China in international freight transit and logistics
Riga Technical University (Faculty of Engineering Economics and Management)	Contribution of logistics to other industries, manufacturing and economy

The LSCC and its members, private companies, cooperate with academic institutions improving curricula, providing internships, realizing common projects and organizing discussions at national level and at the level of Baltic Sea region focusing mostly on "soft" innovations. The LSCC cooperates also with academic institutions and other partners from abroad, especially with partners from Finland, Estonia, Lithuania, Sweden, Poland and Germany.

5.2 BUILDING PARTNERSHIPS

When forming horizontal partnerships a company should take into account the principles of fair competition. Latvia is a member of the European Union and the World Trade Organization, and therefore national, European and international regulations are respected among companies. Accordingly, the main form of cooperation with competitors is in the framework of formalized organizations, such as business associations, cluster organizations and different councils provided by state authorities. Participation in public decision making, sharing experience, and developing market are the main directions for cooperation in these organizations.

The Freeport of Riga participates in different councils and organizations to promote development of transport industry at a national level, the European level and an international level. The other ports are involved in these activities as well. The Freeport of Riga participates in the Latvia's Ports, Transit and Logistics Council that is aimed at development of transport industry in Latvia. This Council consists of representatives of the state, ports and municipal councils. The Freeport of Riga is involved in many associations at an international level (e.g. International Association of Ports and Harbours, European Sea Ports Organization, Baltic Ports Organization) and a national level (e.g. Employer's Confederation of Latvia, and Transit Business Association of Latvia).

The Riga Container Terminal tries to develop partnerships in the framework that allows market and economy. The Riga Container Terminal communicates with competitors but commercial information, as prices and quality, are not discussed. RCT has business-to-business relations with its customers and suppliers. The Riga Container Terminal develops partnerships to improve services, to get new information and to compare company's capabilities with other companies. Latvian export promotion institutions, particularly the Investment and Development Agency of Latvia, help to begin partnerships and to meet partners. Time and money are devoted for partnerships at different levels and companies hope to get benefits. Sometimes partnership is unsuccessful, e.g. when a company has communicated too much information and a competitor has used it for the implementation of new innovation.

The Riga Shipyard is often a subcontractor for the main ship builder from abroad. The ME Riga is a significantly smaller shipyard than the Riga Shipyard. It has specialization and is often used as a subcontractor by bigger shipyards. There are some challenges for development of shipyards in the future. Firstly, there is a lack of technical specialists in the shipyard sector because specialists choose to work in shipping companies and technical specialists are not educated in Latvia, but, for example in St. Petersburg, Kaliningrad, and Astrakhan. Secondly, competitors from Poland, China, Japan and Taiwan challenge the situation in the shipbuilding industry. Fair competition is an important issue both at an international level and at a national level. Thirdly, the economic downturn affects negatively investment decisions because of high risks.

The main advantage of Latvia in the shipyard sector is that labour costs are significantly lower than in Scandinavian countries and many other European countries. The Riga Shipyard has experience in building of oil tankers, fishing vessels, training and expedition ships and naval ships.

JSC Latvian Shipping Company sometimes communicates with its competitors to get recommendations regarding seamen who apply for job and have previous working experience in other shipping companies.

KOMIN's experience shows that partnerships are based on partners' cost cutting needs and ability to provide complementary competences. The partnership contract draft evaluation method is used before partnering process begins. Cost sharing is the main benefit as a result of partnering with competitors. Success factors in partnerships are, firstly, ability to keep promises and to share financial benefits as agreed, and secondly, all partners have to be ready for compromises. Partnership sometimes is unsuccessful because partner's resources and competences are essentially different.

The objectives of the Latvian Supply Chain Cluster are to do innovations in freight logistics and promote international competitiveness of Latvia's freight transport corridor. The advantage of the LSCC is that it can realize coordinated cooperation among private companies and academic institutions. This issue is a priority of the cluster in 2013 because this partnership has great potential and all possibilities for cooperation have not been exploited yet. For example, in December 2012 the LSCC, in cooperation with University of Latvia (Faculty of Economics and Management), organized public discussion about opportunities to develop cooperation between Latvia and China (People's Republic of China) in logistics and international freight transit. Representatives from relevant state authorities, companies, academic and research institutions attended the event discussing current situation and development of new routes between China and Europe through Latvia.

5.3 THE FUTURE OF THE LATVIAN MARITIME CLUSTER

Sustainability of networks is important for the long-term competitiveness of a company. Nowadays, the increasingly global context of markets and competition, as well as increasingly global division of labour and importance of innovations, make it necessary to develop cooperative networks. The sharing of knowledge and best practices are popular activities among partners, also in the Central Baltic region countries.

The Freeport of Riga will develop its numerous partnerships (cooperation with non-governmental organizations and academic institutions, participation in different associations and councils) in the future. It is interested in cooperation with international partners in sharing best practices. Some advantages of the Freeport of Riga are as follows:

1. Geographical location of Riga. It is well-integrated in the East-West freight transport corridor. Geographically the Freeport of Riga is the closest foreign seaport to Moscow.
2. Business competence in freight transportation between the European Union and Russia/CIS.
3. The Freeport of Riga is a multifunctional seaport with well-developed infrastructure.
4. High quality services and competitive port charges.

The Riga Container Terminal would like to be involved in different activities in the future – trading activities (to meet new partners), joint marketing activities, existing tools for networking should be used better, cooperation with universities doing innovations and preparing specialists with good skills and understanding of market to be available in the labour market. The advantages of Riga are, firstly, its geographical location – the nearest foreign seaport to Moscow; Latvia as gateway between two Unions – the EU and the Customs Union of Belarus, Kazakhstan and Russia. Secondly, the Riga Freeport has good infrastructure, and it is well connected to rail transport, road transport and air transport. Infrastructure is improved regularly that allows enlarging cargo volumes and throughput. Thirdly, the employees with Russian and English skills are available in Latvia. Different international partnerships (sharing information and best practices) should be developed in the future using different tools – business associations, cluster organizations, cluster-based networking, new projects and development of innovations.

For shipyards in Latvia an important direction for cooperation in the future could be joint cooperation for gaining funding for common activities. Another direction could be the popularization of engineering sciences among young people because in approximately five years the lack of technical specialists could be dramatic. Studies of marine engineering should be developed in Latvia. As it is in many European countries, it is very useful if marine engineer has 3–7 technical skills – this praxis should be developed more in Latvia as well.

The total income of JSC Latvian Shipping Company in 2012 was USD 114.71 million which is an 18.7% increase compared to 2011. Despite this improvement in LSC's financial results the worldwide shipping market remains very challenging. LSC's core area of expertise, the handy size and medium range product tanker market, has been the least affected by the shipping downturn as compared with other sectors of the tanker market and shipping markets in general. The reasons for this are varied but the main factors are that the products tanker segment has a much greater degree of flexibility in terms of voyage routes and variety of cargo products. LSC Group's fleet is attractively placed within this segment as nineteen vessels within its fleet are ice classed which provides a wider trading range and all have the additional ability to load vegoils/palm oils as well as standard petroleum products. LSC does not expect to see a dramatic improvement in the shipping market throughout 2013. The markets are still suffering, to some extent, from the weak economic environment especially within the EU/USA and the after effects of the extensive product tanker new building program in previous years. Looking to the future there are more optimistic signals that bode well for the product tanker sector with increased demand for refined products in South America, Africa, and Australia due to refinery closures there and the USA becoming an exporter of refined products.

The recent decision made by the European Parliament to reduce the allowed sulphur content in marine fuel to 0.1% from 2015 will have limited impacts on the operation of the JSC Latvian Shipping Company because all ships within the LSC fleet are suitable for marine fuel with considerably reduced sulphur content.

JSC Latvian Shipping Company is interested in developing cooperation with academic institutions because it is important for the long-term development of the company. The advantages of Latvia in shipping sector are as follows: firstly, Latvia has attractive geographical position, secondly, Latvia is a member state of the European Union and participates in the Schengen Area, thirdly, costs for doing

business in Latvia are comparatively low. In the future government should pay more attention for implementation of new training technologies in the higher education institutions, e.g. in the Latvian Maritime Academy.

KOMIN's suggestions for activities in the future are innovation development for seaports and hubs based on ITC means, green corridors methodology and national maritime clusters as a partner's network in BSR countries. The main challenge for business in the future is a lack of skilled workforce available for work according local labour market conditions (e.g. salary level, social security). Creating new local jobs in Estonia, Finland, Latvia and Sweden has to be the focus of the maritime clusters in future. Public actors can support the networking of maritime companies by taking an active role as a moderator for networking events organized by NGOs of maritime companies.

In the 21st century the trend is that the volume of international freight transit is growing in Latvia. Latvia's transport infrastructure should be improved in order to provide more opportunities and be more attractive for international freight transit. Custom services, training and education, throughput capacity (especially in rail transport) and border crossing points Latvia-Russia should be improved to maintain and develop competitive advantages of Latvia in international freight transit transport.

The Latvian Supply Chain Cluster is interested in participation in maritime transport initiatives in the Baltic Sea Region and in the European Union, as well as in cooperation with academic and research organizations doing innovations/research and improving training. Probable issues for cooperation at the international and national levels are as follows:

- Short-sea shipping and development of ports;
- Rail Baltica railway line, development of inland intermodal terminals, shift from railway lines of wide gauge (1520 mm) to the EU standard (1435 mm);
- Development of the North-South corridor;
- Integration of the BSR transport system into the global freight transport networks (especially Europe–China);
- Green logistics, green corridors, green seaports (reduction of negative effects of shipping and seaports to the ecosystem of the Baltic Sea).

The LSCC does already have different partnerships at both the international and national levels but partnerships should be developed in the future improving effectiveness and output.

SUMMARY OF THE LATVIAN MARITIME CLUSTER

1. Latvian maritime cluster is networked nationally and internationally. The main types of partnerships are business-to-business relations, cooperation in projects and different formal organizations, as well as cooperation between private companies and academic institutions.

2. Cluster-based networking is active in the Latvian maritime cluster because triple helix partnerships are present among stakeholders of the Latvian maritime cluster. Ties among state authorities, training and research organizations and private companies should be developed in the future developing curricula and training technologies, as well as providing internships and promoting innovations.

3. Companies try to develop partnerships in the framework that allows market and economy respecting relevant international, European and national regulations. Partnerships are developed to improve services, to get new information, to compare company's capabilities with other companies, to provide complementary competences and to share costs.

4. The Latvian maritime cluster has experience that can be shared with partners. The main advantages of the Latvian maritime cluster are as follows:
   - The geographical location of Latvia – it is well integrated in the East-West freight transportation corridor; the Freeport of Riga is the closest foreign seaport to Moscow; Latvia is located in corridor between the EU and the Custom Union of Russia, Belarus and Kazakhstan.
   - There are specialists in Latvia with Russian language skills and experience working in neighbouring markets, especially Russia and Belarus, as well as they have business competence in freight transportation between the EU and Russia/CIS.
   - Costs for doing business are comparatively lower in Latvia than in many other European countries.

5. Maritime companies in Latvia are interested in developing triple helix partnership of maritime cluster in the CBR. Probable activities could be sharing best practices, improving training in academic institutions, promoting attractiveness of the CBR, and realizing common pilot projects and studies.

6 COMPARING THE VIEWS OF THE MARITIME CLUSTERS IN THE CENTRAL BALTIC REGION

6.1 NETWORKING AND COOPERATION

The maritime clusters of Estonia, Finland and Latvia all have developed intra-cluster networks but the clusters itself are structured rather differently. In Estonia and Latvia, maritime logistics play an important role and networks are gathered around ports, shipping companies, and cargo handling companies, having cooperative relationships also with the land transportation sector. The Finnish maritime cluster, on the other hand, is characterized by the well-developed networks of the shipbuilding industry, such as shipyards and their various subcontractors. Thus, also the content and level of cooperation varies among the clusters.

Naturally, vertical cooperation within the value chain is common for the Estonian, Finnish and Latvian maritime cluster companies alike. For instance in the maritime logistics sector, ports, shipping companies and cargo handling companies have rather close cooperative relationships, and in the maritime industry field, shipyards, partial and turnkey suppliers, and design and engineering companies have well-functioning networks. Furthermore, cooperation with customers, for instance in the form of joint R&D and innovation activities, was seen as very important in order to develop products and services to better meet customers' needs. Companies also have horizontal cooperation, for instance within various projects. At the horizontal level, cooperation is beneficial due to the increased access to knowledge and resources, the risk-sharing opportunities, and the enlargement of competences, capabilities and product portfolio when approaching a customer together. Furthermore, large companies, in particular, have rather wide international networks – customers are often situated abroad and cooperation relationships are established with foreign partners.

In all three clusters, maritime companies highlighted the role of various organisations and associations as discussion forums and platforms for cooperation for companies operating in the same field, offering a meeting point even for competitors. Associations also promote the interests of their member companies and practice political lobbying. In addition, triple helix cooperation was characteristic for all three clusters although its scope, content and frequency varied with the field of operation and the product or service offered. Companies are involved in R&D, innovation and educational cooperation with universities and research institutes, contributing to, for instance, product development and finding and training of competent employees. Governments and municipalities are also involved in clusters' development through shaping their operational environments and developing cluster-related policies. Furthermore, particularly in Finland, several public organisations are offering for instance innovation and internationalisation support for companies.

When it comes to building partnerships, in all the three countries the views on the motives, hindrances and processes of starting cooperation were quite similar. Company representatives often meet potential partners by chance at various events and seminars, or look for suitable ones on purpose with specific objectives in mind. Regarding the partner selection and success of the relationship, trust, ability to compromise, and the resulting increases in profit – in the short or long

term – were the key factors. The unsuccessful cases are respectively related to losses of profits and/or mistrust, for instance, in the form of information misuse. Nevertheless, the most important issue in the success of partnerships – as well as in competitiveness in general – is the question of how to meet the customer's demands better than competitors and how to do that with a price that the customer is willing to pay for. Within competitors the mutual cooperation is challenging due to competition legislation, but several examples of fruitful coopetition were still found, for instance through joint lobbying associations and participation in public decision making. In some cases also experiences are shared between competitors, as long as the discussion does not touch commercial issues.

Regarding the business and cooperation networks between the CBR maritime clusters, various connections do exist but the clusters today do not constitute a particular unity or an international cluster. Many of the studied companies could not immediately identify natural ways for such cooperation, largely due to the different structures between the clusters and more attractive potential available elsewhere. However, most companies still thought that cooperation within the area could be beneficial in terms of educational cooperation and political lobbying, for instance. Furthermore, getting more familiar with the developments of the other clusters could spur the generation of new cooperation ideas.

6.2 FUTURE CHALLENGES AND WAYS TO SUPPORT COMPETITIVENESS

Although having somewhat different structures and competence areas, the maritime clusters in Estonia, Finland and Latvia seem to share similar challenges. There is continuous need for R&D and product development in order to provide competitive offerings, while the general economic situation as well as the global overcapacity in shipbuilding put pressure on the maritime industry sector. The lack of qualified workforce was brought up particularly concerning the Estonian and Latvian clusters, and there is need for increased maritime education also in Finland. Regarding shipping companies particularly, the sulphur directive is seen as the major challenge for competitiveness, and the development of the Port of Ust-Luga is also likely to influence the Russian transit traffic volumes currently flowing through the ports of Estonia, Finland and Latvia.

The survey as well as the interviews resulted in a number of suggestions concerning what kind of problematic issues should be tackled and what kind of concrete actions should now be taken. The issues brought up concerning the development of both national and CBR-level competitiveness, particularly from the cooperation perspective, are presented below.

HOW TO DEVELOP THE COMPETITIVENESS OF THE ESTONIAN MARITIME CLUSTER?

- Maritime education needs to be rapidly increased and focused on different areas of expertise according to the sector's needs. A good example of such practical actions is the merging of Estonian Maritime Academy and Tallinn University of Technology.
- The internationalization of the Estonian maritime companies should be further supported.
- Port efficiency needs to be developed, particularly as regards the increasing competition with the Russian Ust-Luga.
- New working groups should be established within the cluster to prepare policies and regulations as well as joint business projects.
- Political decision-making rationale should be opened up, for instance concerning the purchases of new icebreakers.

HOW TO DEVELOP THE COMPETITIVENESS OF THE FINNISH MARITIME CLUSTER?

- Maritime companies should increase their horizontal cooperation particularly in terms of marketing, internationalization and R&D.
- In order to engage in international projects, companies need to form pools of expertise and have a joint contact point or even an international marketing organization, promoting particularly the Finnish maritime knowhow.
- Business models must be continuously revaluated to comply with the globalized industry. To better cope with the cyclic nature of the maritime industry, the companies should preferably operate in several fields and markets, or at least serve several customers.
- Companies as well as research institutions and public actors should increasingly engage in developing the Finnish expertise in the Arctic, offshore, and cleantech sectors.
- Competitiveness can be significantly strengthened also by solving the problems at hands, such as the efficiency of the Finnish logistic chains, including the number and specialization of ports, the conditions and coverage of railway and road networks, etc.
- The communication of various research projects should be coordinated at some level, so that the results would really reach the business and public decision-makers. The R&D funding should be reorganized to be more easily accessible for SMEs and international consortia.
- More focused networking events should be organized so that they would provide real and natural cooperation opportunities for the participating maritime companies.
- Political decision-making should be more far-sighted – for instance, in the procurement of new vessels, instead of always selecting the option of the lowest cost, room should be left for financing innovative solutions and take into account the positive multiplier impacts of having the vessels bought from the Finnish maritime cluster.

HOW TO DEVELOP THE COMPETITIVENESS OF THE LATVIAN MARITIME CLUSTER?

- National and international networking of the maritime companies should be increased and supported. Particularly international partnerships should be developed to increase the sharing of information and best practices.
- Public actors and NGOs should act as moderators and initiators of future networking events.
- Cooperation between universities and business should be increased in terms of innovation development and education.
- Custom services and throughput capacity at Latvian-Russian crossing points need to be improved to support international freight transit.

HOW TO SUPPORT COOPERATION AND JOINT COMPETITIVENESS AT THE CBR LEVEL?

- Due to the shared challenges, there is a lot of potential for mutual cooperation in terms of joint R&D, repair and maintenance operations, ship conversions, educational cooperation, and EU-level lobbying.
- Because of the new environmental regulations, the clusters in the region must rapidly develop the related technical and infrastructural solutions. This can make the whole region a "green forerunner".
- An international meeting point and the related events should be organized for the companies to meet each other and share ideas.
- Through the Arctic Corridor initiative and by connecting the national logistic clusters, the CBR could be strongly integrated into the future global freight transport network as a provider of comprehensive, energy efficient and environmentally friendly services and solutions.
- International political cooperation is needed in order to create a concrete policy and vision[3] for supporting the competitiveness of the CBR region maritime clusters. Such a vision should include the development of the Arctic and cleantech expertise areas and aim at blue growth[4].

[3] The SmartComp Project is to produce in Work Package 4 policy recommendations and a specific strategy proposal for supporting the cooperation of the CBR maritime cluster at the political level. For more information, see www.cb-smartcomp.eu.

[4] For more information on the concept, please visit http://ec.europa.eu/maritimeaffairs/policy/blue_growth/index_en.htm.

The developments in the whole Baltic Sea region influence the maritime clusters in the Central Baltic region, which thus can never be thought of in isolation. However, the cooperation always has to start somewhere. As an example in our neighbourhood is the "Scandinavian 8 million city"[5] transport, innovation and cooperation area under development between the metropolitan areas of Copenhagen, Gothenburg, Malmö, and Oslo. Consequently, on the other side of the Baltic Sea, we should not only sit and wait to see what the global markets will have for us. On the contrary, based on the shared challenges and opportunities, the Estonian, Finnish, Latvian and Swedish maritime clusters engaging in cooperation might definitely make sense in the long run.

In addition, the presence of Russia's developing maritime cluster in the neighbourhood is both a challenge and an opportunity, and thus including North-West Russia into such cooperation activities would add great potential to this international cooperation initiative. The inclusion of Lithuania and Poland into the group of clusters was also seen worth consideration. Creating a multinational pool of complementary resources and expertise, both in terms of logistics and shipbuilding, could turn out to be a trigger for increased competitiveness for the region's maritime clusters.

[5] For more information, please visit http://www.8millioncity.com/index.

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8 INTERVIEWS

ESTONIA				
Arikas	Rene	Board Member BLRT Marketex	BLRT	1.2.2013
Ennuste	Madis	Air & Sea Division Manager	DSV	21.12.2012
Heldur	Vaher	Project Manager	Sillamäe Sadam (Port of Sillamäe)	1.4.2013
Kreem	Enn	CEO	Eesti Laevaomanike Liit (Estonian Shipowners` Association)	14.1.2013
Laidvee	Erik	Chairman of the Board	Transiidikeskuse AS	24.1.2013
Lääne	Luule	Communication Manager	Tallink Group	10.4.2013
Niit	Anti	General Manager	Hanjin Shipping (NLS Eesti OÜ)	15.1.2013
Ninnas	Toivo	Chairman of the Supervisory Council	Tallink Group	14.1.2013
Ots	Jaano Martin	Member of Board	Development Centre of Estonian small ports	4.4.2013
Ratas	Ants	Board Member	CF&S (Chartering Forwarding and Ship`s Agency)	14.1.2013
Ringmaa	Erik	Chief Commercial Officer	Tallinna Sadam (Port of Tallinn)	18.12.2012
Treiel	Urmas	Director	Saaremaa Shipping Company	13.4.2013
Vähi	Tiit	Board Member; former Prime Minister	Sillamäe Sadam (Port of Sillamäe)	1.4.2013
FINLAND				
Backman	Mikael	CEO	Viking Line	3.4.2013
Hartiala	Kari	Purchasing Manager	STX Finland	25.3.2013
Heikinheimo	Juha	President	Napa Oy	9.4.2013
Heikonen	Pekka	Managing Director	Pemamek	29.4.2013
Kordelin	Tapio	Managing Director	Shippax	25.4.2013
Manner	Olli	President & CEO	Elomatic	26.4.2013
Manninen	Kyösti	Commercial Director	Port of HaminaKotka	28.3.2013
Marttinen	Vesa	Managing Director	Turun korjaustelakka	22.3.2013
Mustamäki	Esko	CEO	Arctech Helsinki Shipyard	8.4.2013
Mäki	Kimmo	Managing Director	Port of Helsinki	9.4.2013
Mälkiä	Jussi	President	Meriaura	23.4.2013
Ramberg	Christian	Managing Director	Port of Turku	25.3.2013
Rytkölä	Ilkka	General Manager	Wärtsilä Ship Power	3.4.2013
Salmi-Lindgren	Merja	Secretary General	Finnish Marine Industries	22.3.2013
Savo	Kimmo	Manager R&D, Special processes	Technip	11.3.2013
Takkinen	Markko	Commercial Director	Antti-Teollisuus Oy	17.4.2013
Vauraste	Tero	President & CEO	Arctia Shipping	10.4.2013
Viitanen	Ari	Director, Customer Solutions	Cargotec	30.4.2013
Windischhofer	Richard	Business Development Manager	ABB Marine and Crane Services	10.4.2013
LATVIA				
Japina	Sanita	Senior Personnel Officer	SIA LSC Shipmanagement	16.4.2013
Katranži	Māris	Member of the Board	Riga Container Terminal	5.4.2013
Leiškalne	Anita	Director of Public Relations Department	Freeport of Riga Authority	18.4.2013
Poligin	Vladimir	Production Manager	ME Riga	11.4.2013
Spūlis	Andris	Member of the Board	KOMIN	17.4.2013

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