



Organizational and Cooperative Challenges and Opportunities of Logistics Center Development in Murmansk and Arkhangelsk

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Summary: The main aim of the report is to summarize all findings and research results concerning logistics centre development in the Murmansk and Arkhangelsk regions of North-West Russia. Those findings concern analysis of organizational opportunities, developments, and bottlenecks as well as evaluation of cooperative inclinations between potential hub stakeholders. Secondary data analysis, survey, field trip and a set of interviews were conducted in order to give a broad overview of the present situation and future perspectives. Experts of the region, main hub stakeholders, and StratMoS partners took part in the research to ensure valid and reliable results.	
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Preface

The StratMoS project is a part of the North Sea Interreg IVB programme. The StratMoS project is in progress from January 2008 to September 2011 and has partners from Norway, Belgium, Denmark, Germany, United Kingdom and The Netherlands. Furthermore StratMoS partners remain in cooperation with partners from North-West Russia. This present Demonstration Project 1 report has been developed and written by FDT- Association of Danish Transport and Logistics Centres with support from DP 1 partners. The report consists of 9 chapters and 5 appendices.

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1 Introduction

The modern globalized economy is widely characterized by specialization and integration of activities on local, regional, national, and international levels. It is also influenced by the rapid technological development, controversial political issues as well as ecological impact of undertaken decisions. The European Union realizes the challenges and opportunities of cooperation with its neighbor countries and thus implements a number of projects aiming to enhance collaboration in various fields.

Taking into account that North-West Russia, being Europe's close neighbor and important trade partner, possesses strategic natural resources as well as vast land and maritime territory, some of the projects seek to involve Russia in international transport corridors. The main idea behind one of them, the StratMoS project, is development of efficient and sustainable connections between coastal areas while increasing regional prosperity and integration in the Barents and North Sea Region. The current study was undertaken within Demonstration Project – 1 (NMC – Barents Sea intermodal service) with a support of tools developed at the Work Package – C (MoS development in hubs and hinterland) of the StratMoS project.

The Barents Sea region includes five districts of North-Western Russia: Murmansk Oblast, Arkhangelsk Oblast, Republic of Karelia, Komi Republic, and Nenets Autonomous District showed on Figure 1 below.

This region is considered to have one of the highest growth rates among all Russian regions and big development potential due to its natural resources, scientific base, human resources and developed industry. Despite its hard climatic conditions the region has also a long and successful trading tradition mostly due to the Northern Sea Route which was developed and started to operate in Soviet time, and its biggest ports Murmansk and Arkhangelsk. Indeed, these two ports can become efficient and important logistic centers/hubs, thus involving their districts into international interaction and generally developing Russian Barents Region.

Figure 1: Map of North-West Russia



The main development factors for the region as mentioned in FDT's report "Logistics in the Barents Sea" (for the project NMC II - North Maritime Corridor, November 2007) were and still remain the following:

- The planned development of oil and gas activities in the on- and offshore fields in the Barents Sea and Northern Russia
- Extraction and export of other natural resources from Russia
- Limited capacity, congestion and high handling charges in the Baltic Sea ports
- Emergence of the South-East Asian economies and intensification of trade between them, Europe and USA
- Growing demand in the North-West Russian market
- Increased shift of transportation from inland to the sea and connected with this development of inter- and co- modality in the transportation corridors

However nowadays there are several problems which limit the region's transportation competitiveness and do not allow full exploiting of its potential. Those problems include both

physical and organizational issues. The former addresses the urgent need for infrastructure development and modernization, while the latter deals with political and legal issues, competition and lack of collaboration between different actors involved.

Again, turning back to the previous report, more specific hub bottlenecks were:

- Underdeveloped transport infrastructure, especially lack of reloading and multimodal facilities, insufficient hinterland development of ports, lack of rail links to the ports
- High costs of transportation through Barents Sea due to high inland transportation costs on the way Murmansk-Moscow, high rates for using Northern Sea Route, too high harbor duties in ports of North-West Russia
- High dependence on political decisions regarding allocation of funds for the development of the ports in the Russian part of the Barents Sea, insufficient funding
- Unequal conditions for the Russian and foreign companies in relation to carrying out petroleum activities and acquiring port areas
- Limited containerization of transport volumes, lack of container terminals

Overcoming those bottlenecks would allow the Barents Sea Region to become an important player in the facilitation of logistics flows between EU – Russia and potentially Asia, in the years to come.

The present report gives an overview of the project findings, research results and initiatives in the region in order to evaluate the **current state of affairs, challenges** and **opportunities** for logistic centers development in both Murmansk and Archangelsk paying special attention to **organizational and cooperative issues**.

This means that the mentioned above positive factors and bottlenecks will be newly addressed, analyzed, and discussed with the experts and stakeholders of the potential Murmansk and Arkhangelsk hubs giving the most objective and comprehensive look at the situation which is possible. Finally, it will result in recommendations concerning hub development from the organizational perspective which would help to understand stakeholders' opinions and focus them in the same direction.

2 Problem formulation and report outline

The report aims to give an answer to, and is organized around, the following problems:

- **Which organizational bottlenecks exist for logistics centre development in the regions,**
- **To what extent are the actors in Murmansk and Arkhangelsk regions ready to cooperate both physically and organizationally in terms of creating an open and integrated logistics center, and**
- **How to encourage this cooperation between potential stakeholders.**

In order to answer these questions it is essential to understand the overall situation in the regions, including economic environment, governmental support, and transport and infrastructure conditions. Besides, hub stakeholders should be identified and analyzed according to the following parameters: who those actors are, how do they perceive logistics centres in their regions, what are their interests, concerns and expectations, how can they benefit from collaboration resulting in logistics center creation, and finally how to communicate them those logistics centre benefits.

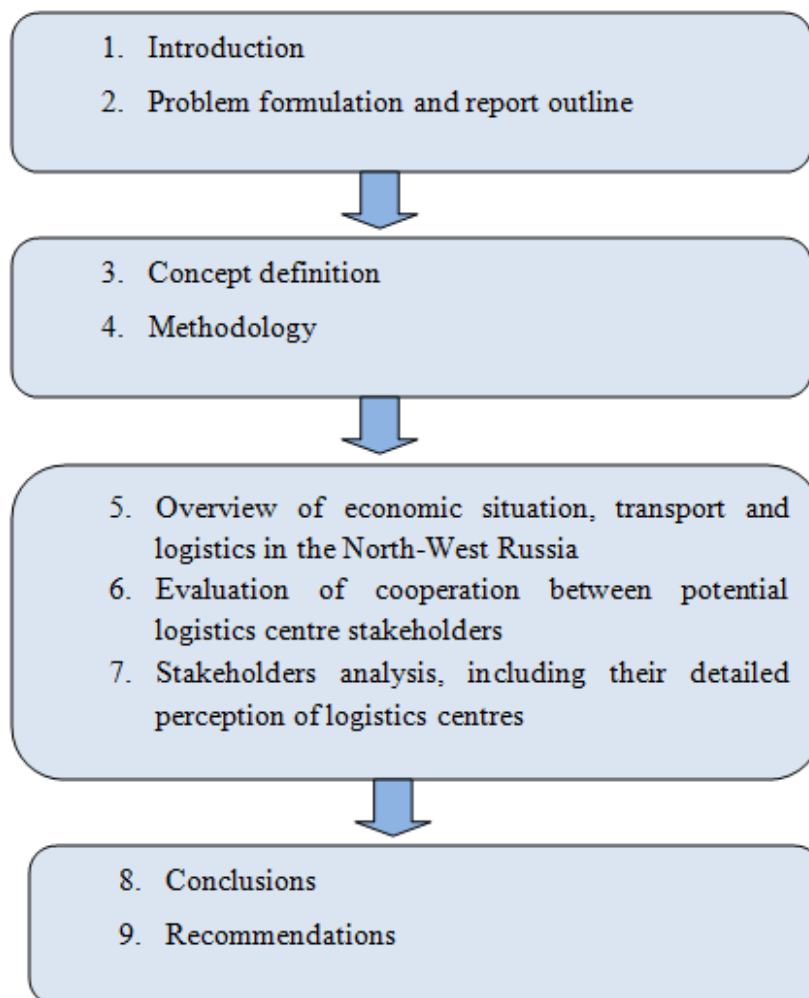
The report, which includes all the relevant for the above mentioned tasks findings from various researches and studies, will be organized as follows. First, the introduction, problem formulation, and report outline present the overall purpose, background and structure of the report. After that the concept definition and methodology will be presented. The chapter with concept definition will explain our vision of such terms as logistics centre/hub (which will be used as synonyms, or substitutes, throughout the report), cooperation within the hub, and stakeholder. Those terms are quite broad and can be used in various meanings. Thus it is crucial to specify in which meaning they will be used in this report to avoid confusion. The methodology chapter will reflect our scientific approach to the research to make sure that the obtained results have a necessary level of reliability and validity.

Afterwards three empirical chapters will summarize findings obtained during research which followed the methodological framework mentioned above. Those chapters will make an overview of the economic situation, transport and logistics in the region; evaluate cooperation between potential hub stakeholders; and conduct stakeholder analysis focusing on stakeholders' perception of logistics centres, their motives, concerns, positions and resources in relation to hub development.

It is very important to note that the first empirical chapter giving the general situation overview is based on official and statistical data, while the remaining parts summarize personal attitudes, opinions and ideas of stakeholders. It means that those two kinds of data should be treated differently, and the stakeholders' opinions should not be criticized for being not objective or imprecise.

The general report structure is presented in Figure 2.

Figure 2: Report outline



3 Concept definition

In this section the definition of a Logistics Centre and stakeholders will be presented and our approach to their analysis will be clarified. The source basis for this chapter includes ideas and classifications from widely accepted scientists, researchers, professional associations as well as finding obtained within related Demonstration Projects and Work Packages of StratMoS.

3.1 Logistics Centre definition

According to Europlatforms (2004), “*a Logistics Centre is the hub of a specific area where all the activities relating to transport, logistics and goods distribution – both for national and international transit – are carried out, on a commercial basis, by various operators*”. In this definition, the operators may be owners or tenants of the buildings or facilities (warehouses, distribution centres, storage areas, offices, truck services, etc.). To be competitive and follow the free market rules, a logistics centre must be open, or accessible, to all companies involved in the mentioned above activities. A logistics centre should contain all necessary facilities, be served by a variety of transport methods (roads, rail, sea, inland waterways, air), and provide high quality of services with intermodal solutions.

One of the main prerequisites for creating a logistics centre is location. Reduction of the delivery time and costs is the main goal of logistics centres, thus it is vitally important to assure fluidity between all the transport connections and coordinate all means of transport and actors involved. That is why most logistics centres are located in hub points for transport and distribution activities, which means near the main seaways, railways, and motorways (Europlatforms, 2004).

Management of a logistics centre should be run by a neutral legal body, preferably in form of a Public-Private-Partnership. In most cases public authorities constitute a company's main stakeholder, because creating a logistics centre often requires huge investment with long return period, which is not always highly attractive for private investors. Thus, financial support from public institutions is a key element for logistics centre building. Besides, logistics centre is supposed to positively affect the local economy by becoming part of an important territorial development plan. The main stakeholders of logistics centres are normally national and local

territory planning institutions, public authorities, railway companies, local transport associations, customs, insurance and consulting companies, industrial associations (Europlatforms 2004).

Judging by its definition and properties a logistics centre corresponds to a cluster in its broader meaning. For instance, Marshall (1930) who actually started the cluster concept development viewed clusters as *“a group of establishments belonging to the same industry within geographic boundaries”*. Similarly, Porter (1998) who summarized and systematized at some point all developments related to clusters defined cluster as *“a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities”*.

3.2 Logistic Centre in a cluster perspective

In our case the port areas together with nearby hinterlands fully fit to those definitions. Indeed, the geographical proximity is evident due to the historical connectedness of transport service providers around ports. The assumption that companies belong to the same industry and are interconnected can be proven by the fact that they serve the same market, their services are complementary and they often belong to the same value chain. Finally, not only private firms but also public bodies are characteristic for logistics centres in ports, which complete the list of similarities. Thus, hereafter a term “cluster” will be used as a synonym to “logistics centre”.

The cluster shaping factors according to Porter which will be also used in our analysis are:

- Factor conditions: skilled labour, infrastructure, educational institutions. In order to increase competitiveness those factors should be highly efficient, specialized and their quality should increase over time. Moreover, a specific set of factor conditions is normally unique and is hardly reproduced anywhere else. This enhances economical results from local procurement for the cluster members.
- Demand conditions: highly sophisticated demand is very likely to stimulate innovation and quality of products/services provided by the cluster. Thus cluster members have to cooperate with their customers in order to find out and fully satisfy their needs.
- Related and supporting industries: they are important for cluster development, because together with capable producers they can enhance knowledge transfer and innovation generation, thus increasing cluster competitiveness even further. Besides, supporting

industries will let producers to focus on their core products/services and outsource other activities.

- Firm strategy, structure and rivalry: positioning in the location with a variety of competitors would motivate a company to differentiate from rivals and thus innovate. It is every company's own choice which results and how exactly it wants to achieve. The competitive strategy of cluster members thus is an important source of cluster formation and development. (Cortright 2006)

3.3 Cooperation within clusters

Cooperation is a common concept in today's business life. It can be defined according to Andersen and Narus (1990) as "*complementary actions taken by firms in inter-dependent relationships to achieve mutual outcomes over time*". This implies that cooperation requires a proactive attitude towards interactions and commitment as well as construction of social capital among counterparts (Felzensztein, Gimmon & Aqueveque 2009). Another definition was suggested by Easton and Araujo who believe that cooperation takes place "*when two or more parties have objectives, which are mutually dependent*" (Hagberg-Andersson, Virtanen & Kock 2007). The degree of dependence may vary, depending on types of activities. There are also other definitions of this concept. However, they all stress interdependence between counterparts and their common goals.

Thus, as an operational definition for the purpose of this project we will take the definition of Andersen and Narus, assuming that *cooperation is a range of complementary actions taken by firms in inter-dependent relationships to achieve mutual outcomes over time*.

It is often said that establishment of a cluster is more about a historical coincidence of locating firms at the same place (Brown & McNaughton 2001). However, later on in order to attract new members and develop the cluster some positive externalities should arise. That is why leading firms often start to develop networks. However, interactions between firms cannot be seen isolated from each other, that is why social structures and social capital need to be developed. Besides, through commercial and non-commercial exchanges companies become unconsciously tied to one another and even stronger locally embedded, given that their buyers/supplies are situated in the same place as themselves. Porter (1998) called those ties "*social glue*".

The main element of “social glue” leading to establishment of cooperative relationships is **trust**. It makes firms to fulfil their obligations and promises and behave in a way which is mutually beneficial for themselves as well as their counterparts. In addition, relationship commitment, which is a desire to maintain a valuable relationship, contributes greatly to network evolution. However the danger of opportunistic behaviour cannot be eliminated completely even if it should be minimized by common effort not to let the relations development slow down.

When the trust is present companies can have common strategic directions of action and at this stage fruitful interactions and information exchange can bring the network to new levels. The close geographical location of companies is beneficial, since it allows communicating more often and adjusting easier to each other. Here another dimension, or **previous experience**, comes into play. On one hand it is provided by collocation and interactions in the past. On the other hand satisfaction from previous interactions and success in reaching common goals enhance cooperation in the future. Beside of the technical and market knowledge exchange there is also so called tacit knowledge. This means that companies have a common background; they are situated at the place with the same cultural and ethical norms. Their employees might interact not only on formal, but also informal level sharing same values and interests. This would facilitate information flows even further. On top of that, governments which realize benefits from clusters to their regions tend to establish special institutions aiming on creating healthy supportive environment for clusters (Felzensztein & Gimmon 2009).

The analysis of social networks within cluster requires evaluation of both structural and interactional **closeness** dimensions (Shaw & Conway 2000). The former sub-dimension means the density of interaction, resulting in its frequency, roles division and ways in which firms are connected to each other. At the same time the latter dimension looks at the content of relationship and level of formality. As mentioned above informal relations add value to network through more intensive information flow and strengthening of trust as well as decreasing opportunistic, or free-rider, behaviour.

Besides, the aim, for which relations are created, or in other words **expectations** are important. One needs to be aware that the goals of different stakeholders can be very hard to match which may weaken cooperation. It is important to realize that clusters are not only about cooperation. Since a lot of potential, even though specialized, rivals are situated in the limited territory the competition is

natural in this situation. Indeed, many authors claim that the more interaction the better, no matter whether it is common project or competitive moves. Co-opetition which is a common characteristic of clusters thus enables its competitiveness and is beneficial for members. Some researchers claim even that too much of cooperation and too little of competition is harmful for cluster (Chetty & Agndal 2008).

To sum up, cooperation within clusters builds upon trust. When achieved, it leads to extensive knowledge exchange and frequent fruitful interactions (otherwise called previous experience). All of them are embedded by local culture and anticipated norms (tacit knowledge), and can be characterized by various levels of closeness and actors' expectations. At the same time with cooperation within cluster there is a competition, which brings healthy motivation effect enabling innovation in the district. This general picture of cooperation within clusters will be further developed in the next chapter, where exact operational definition of cooperation, its measures and indicators will be presented resulted in specific research design for the purposes of this project. However, before that the general metatheoretical considerations of the project will be highlighted.

3.4 Definition of Stakeholders

Stakeholder is a term, which was first used in business management theory and lately has become equally popular among business people, researchers, governmental institutions etc. Stakeholders appear within different business situations. There might be involved from few up to multiple stakeholders in a project. In some countries, such situations are described by terms "joint", "collaborative" or "partnerships". Stakeholders are often characterized by their interests (which can be both common and contradictory), motives, and relative power. (Sithole 2002)

There are various definitions of the term "stakeholder", most of which though capture the same idea and even put it in similar words, i.e.:

- *"All those claimants inside and outside the firm who have an interest in the problem and its solution" and "are the concrete entities that affect and in turn are affected by a policy"* (Mason & Mitroff 1981, p. 43, 95)
- *"Groups or persons with legitimate interests that are known and have been identified" with "a constellation of co-operative and competitive interests possessing intrinsic value"* (Donaldson & Preston 1995, p.66)

- “Any group or individual who can affect, or be affected by, the achievement of an organization’s purpose, and each of the many stakeholder groups has a unique set of expectations, needs, and values, some of which are conflicting” (Clarkson 1995; Freeman 1984; Harrison & St. John 1994)
- “All of the agents for whom the firm’s development and good health are of prime concern” (Mercier 1999)
- “Any group or individual that can affect or be affected by the realization of a company’s objectives” (Freeman 1984)

To sum up, the overall idea of a term “stakeholders” is that they influence and are influenced by some organization/project/problem, have a unique set of expectations, goals and interests which can be cooperative or competitive (meaning common and contradictory).

3.5 Characteristics of Stakeholders

As mentioned in the definition, stakeholders can be described by the following categories: their goals, interests, position, resources and power.

A **goal** is an intention that a stakeholder has for developing a project/business or solving a problem. Goals may be complementary or contradictory, meaning that achieving one goal can influence positively or negatively achieving another goal. That is why modeling goals and their relations let researchers analyze the relationships between stakeholders with different needs. (Alexander 2005)

Interests (or motives) and **concerns** of the stakeholder in the project are the advantages and disadvantages that implementation of the project can bring to him. Data on those advantages and disadvantages are crucial information which should be as detailed as possible. It will be extensively used in developing conclusions and strategies for dealing with the stakeholders’ concerns.

A **position** refers to the stakeholder’s status as a supporter or opponent of the project. The position of the stakeholder can be defined by collecting information directly from the stakeholder (i.e., self-reporting) and indirectly from secondary information or other stakeholders (i.e., others’ perceptions).



Power (or influence, or importance) refers to the ability of the stakeholder to affect the implementation of the project due to the strength or force he possesses. Power arises from combined measure of the amount of resources a stakeholder has and his capacity to mobilize them.

Resources in their turn can be of many types — human, financial, technological, political, and other. The stakeholder's power should be evaluated through his access to all of these resources. The resource assessment consists of two parts: the quantity of resources that a stakeholder has within his or her organization or area, and the ability to mobilize them. (Schmeer 1999)

4 Methodology

4.1 Stakeholder Analysis

Stakeholder analysis is an approach or a set of tools for creating knowledge about stakeholders in order to understand their goals, interests and relations and to assess their importance and resource contribution to the project. It might have different tools and applications in the fields of policy, management and project implementation. (Varvasovszky & Brugha 2000)

The most widely accepted techniques for stakeholder analysis in the field of project implementation include consequent steps allowing progression from situational analysis and the identification of stakeholders, to their interests, motives and perceptions of the project/organization (in our case, logistics centre).

Stages of a stakeholder analysis for the purpose of project implementation – namely, for a logistics centre development - are presented on the Figure below.

Figure 3: Stages of the Stakeholder Analysis



4.1.1 Definition of the economic, policy and infrastructure context of the Logistics Centre

The initial step of stakeholder analysis is the situation analysis. It allows to collect a background information about the environment in which stakeholders operate and thus to reveal some underlying factors and reasons explaining their behavior and reactions. Besides, through such an analysis the broader picture of relations and interconnections can be drawn, though mostly formal. The overall economic, political, and legal situation in a specific region under investigation influences greatly motives and expectations of stakeholders.

Suggested methods for situational analysis include mainly literature reviews and archival searches. However, sometimes those documents can be biased by the influencing stakeholders. Thus, opinions should be collected from wide ranging sources operating at many different levels. (Sithole 2002)

Specific questions to be answered at this step are:

1. What is the current situation in the region (with its impact on the Logistics Centre creation)?
2. What is the policy framework for the Logistics Centre management?
3. What are the incentives and developments in the region influencing the Logistics Centre?
4. Which previous studies on this topic in the region have been made and what are their outcomes?

4.1.2 Identification of the logistics centre stakeholders

This stage of stakeholder analysis includes registering all the actors - groups, persons, organizations and institutions - that have some relations with project/organization/problem under investigation.

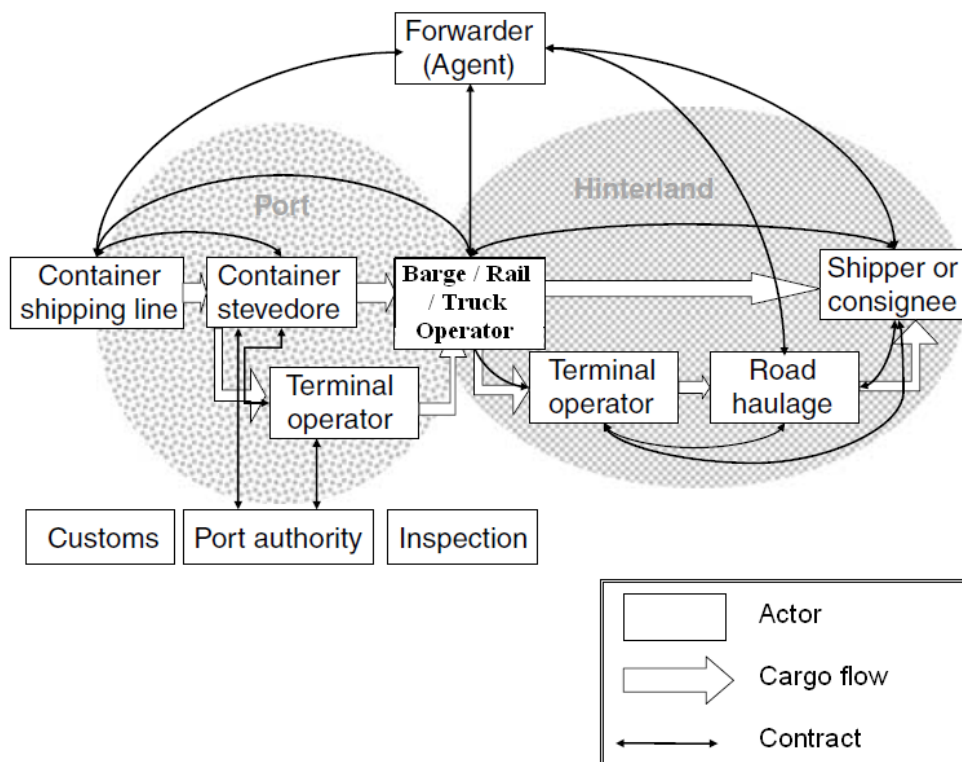
In order to facilitate the process the following questions can be used:

1. *Who is responsible for accomplishing the project?* It might be persons or groups that have legal, financial or contractual responsibilities in relation to the project.
2. *Who will influence the project?* Those are persons or groups who will have the chance to control the direction in which the project is developing. Influencers' actions can support the objectives of the project or threaten them. Also people with informal influence or official power of decision should be added here.

3. *Who are the people linked to the project?* Those are people with whom the organizations behind the project interact, including internal stakeholders or stakeholders who have long-term relationships with the organizations driving the initiative.
4. *Who depend on the project?* Those are people or groups for whom the project execution is crucial. They are the most dependent on the outcomes of the initiatives.

As a basis for hub stakeholder identification for the purposes of this report a port-hinterland chain was taken. It includes various actors incorporated in hub value chain and reflects both port and hinterland sides, transport services users and providers, as well as connections and relations between them. The port-hinterland chain is presented in the figure below.

Figure 4: Port-hinterland chain



Source: Van Der Horst, De Langen, 2008

It is important to note that most of the chain members were contacted during the research. However not all of them took part in the questionnaire and/or interviews. Thus, the full chain should be kept in mind, while the actual analysis will be based on the possessed data.

4.1.3 Identification of the stakeholders' perceptions, cooperation, goals, interests, concerns and positions in relation to Logistics Centre development

When the stakeholders are registered they need to be contacted and analyzed. This can be done according to their perception of a Logistics Centre, cooperation inclinations, and main characteristics such as goal/intention, interest/motives, concerns, and positions.

It is during this stage that field work should be done through surveys and interviews with key respondents. These techniques allow getting necessary information directly from the stakeholders. This information includes stakeholders' interests and the relative position they consider they occupy. It is important that stakeholders' goals and motives reflect their own point of view. In addition to questions concerning informants directly, also indirect questions about other stakeholders are asked here.

It is essential to detect the stakeholders' main interests through formal questions, such as:

1. What expectations do you have for the project?
2. What benefits would the project provide you with?
3. What are your concerns?
4. Do you in general support or oppose the project?
5. Which stakeholder do you believe will be in conflict with the project's interests?
6. Do the stakeholders have opposing interests?

4.1.4 Outline of assumptions and risks

The analysis of stakeholders' interests and motives in combination with their importance and influence leads to identification of potential assumptions and risks which the project can face. This means that the results will help to ask our research question and identify the level of readiness of stakeholders for the hub creation.

Thus, the last stage of a stakeholders' analysis is to identify potential risks and opportunities the project can meet. This last stage provides some important information for a project risk management plan to be drawn up. (Greenley, Hooley, Rudd 2005)

4.2 Data collection methods overview

As suggested by the theoretical framework the data collection methods for this research include secondary data analysis, brainstorming, survey, and interview conduction. Due to the fact that survey and interview methodologies are complex and require greater attention, they will be described in the next sections of this chapter. And the focus of this section will be secondary data sources and brainstorm conduction.

The secondary data used in the research includes:

- Regional economic reports
- Official national statistics
- Publications in maritime and business related magazines
- Information from the web-sites of organizations monitoring Barents region
- Previous reports made within and outside of the NMC/StratMoS project

The brainstorm for the purpose of stakeholder selection and risk identification was held by the group which included:

- Specialists in Logistics Centres and Maritime Transport
- StratMoS partners
- Local representatives from Murmansk and Arkhangelsk

Since it was difficult to bring all participants at the same place at the same time, a series of meetings and phone conversation was held for obtaining brainstorming results.

4.3 Survey methodology

In order to evaluate cooperation between hub stakeholders a set of measures was developed. The first factor from which the perceived cooperation value is derived is closeness. In order to make the relationship work the interacting actors must invest in the relationship leading to the creation of adaptations. Closeness thus shows how often do firms interact, in which forms, and what is the character of cooperation, formal or informal. According to Hakansson and Johanson, informal cooperation occurs when counterparts want to be involved into collaboration, but without visibility. Alternatively, formal cooperation takes place when the common actions are put under control and structured in formal way. (Hagberg-Andersson 2006) Thus, in this project closeness of cooperation

will be measured through its forms, frequency and character. Forms of cooperation will be revealed with a help of an open question and codified with nominal scale. For measuring frequency of cooperation a ratio scale with 5 variants will be used. Finally in order to assess the character of interactions we will use the 5-point ordinal scale.

Closeness in the relationship will create an atmosphere of trust and mutuality (Hagberg-Andersson, Virtanen & Kock 2007). Trust in someone or something can be defined as *“an attitude, characterized by the belief in the counterparty’s reliability; that the behavior of the counterparty is predictable in terms of its direction and intensity, which means that future actions of the counterparty will conform to obligations assumed”* (Raimondo 2000). Thus trust has three main dimensions: reliability, predictability and honesty/fairness (Zaheer, McEvily & Perrone 1998) - which for the purposes of this study will be measured by open question with ratio scale (respondent will be asked to divide 100 point between 4 categories).

In general, this perception of reliability comes from experience, and more particularly from a sequence of satisfactory interactions, that is a series of evaluative processes from which a systematic confirmation of expectations emerges (Raimondo 2000). Satisfaction from interaction as an indicator of previous experience will be measured in the survey by ordinal scale with 5 variants of answer.

Yet another measure of cooperation is associated with expectations from cooperation, motives and goals. Depending on the industry those potential outcomes may vary greatly, but they are normally connected to improving of operational indicators, access to resources and internationalization. (Felzensztein, Gimmon & Aqueveque 2009) In our study we will evaluate expectations by using a nominal scale with possibility for open answer.

Survey data were collected through self-completion questionnaire distributed by fax and SurveyXact (on-line mode). The questionnaire was sent to the full population of both private and public organizations (in total 53) within the hubs, i.e. public authorities, ports, shipping companies, forwarders, terminal and rail operators, other logistic service providers, as well as the largest potential users of those services (enterprises) in Arkhangelsk and Murmansk regions. The categories of potential stakeholders were derived from Europlatforms classification.

The structure of the questionnaire includes three sections. The first section collects general information about respondents (type, industry, size) and their opinion about transport and logistics services in the region – in order to later on classify respondents and look for the connections between their answers and their characteristics. Thus this section combines informant factual questions and questions about attitudes.

The second section evaluates the respondents' cooperation with their counterparts, such as service providers, customers, competitors and public institutions, reflecting the mentioned in previous subsection indicators. The questions attached to each of the indicator are presented in the table below.

Table 1: Correspondence of questions from the questionnaire to the cooperation indicators

Measure of cooperation	Indicator	Question formulation	Type of question / Scale
<i>Closeness</i>	Forms	(If you cooperate with your partners,) what common projects are you involved in?	Open question / Nominal scale
	Frequency	How often do you interact with your partners?	Ratio scale with 5 variants
	Character	When people from your organization meet with people from other organizations to discuss common projects, is it (formal or informal interaction)?	Ordinal 5-point scale
<i>Trust</i>	Reliability Predictability Honesty	If your organization was to be involved in common project, indicate what would you expect from the partner?	Open question with ratio scale (divide 100 point between 4 categories)
<i>Previous experience</i>	Satisfaction from interactions	How would you assess achievements from the cooperation with your partners?	Ordinal scale with 5 variants of answer
<i>Expectations</i>	Goals	Would it be useful for your organization to have logistics centre established in your city? Which purposes would logistics centre serve for?	Nominal scale with possibility for open answer

Finally, the third block of questions is devoted to perceptions of logistic centres. To begin with, the feeling of belonging to some kind of logistic centre is revealed. Then depending to their opinion, the

respondents are supposed either to identify a need and purposes of establishment of logistic centre (if they do not think it exists at all) or to assess its benefits and drawbacks (if they see some sort of logistic centre to be present). The full questionnaire (English version) can be found in Appendix 1.

Since the survey is addressed to the organizations located in the North-West Russia, the questionnaire was translated into Russian language to make sure that the questions will be understood and answered properly, and thus to increase the validity of the research and response rate.

The response rate achieved was 22.6 %. Initially the questionnaire was sent to 53 potential respondents with their prior notification by phone where possible. The comprehensive covering letter with clear instructions and purposes of a survey was included. The reminder e-mails / phone calls followed the questionnaire in 10 days if no response was received after distribution.

4.4 Interview methodology

The interview outline for the purpose of the research consists of 4 blocks of questions, two supporting sections, and looks as presented in the Figure 5.

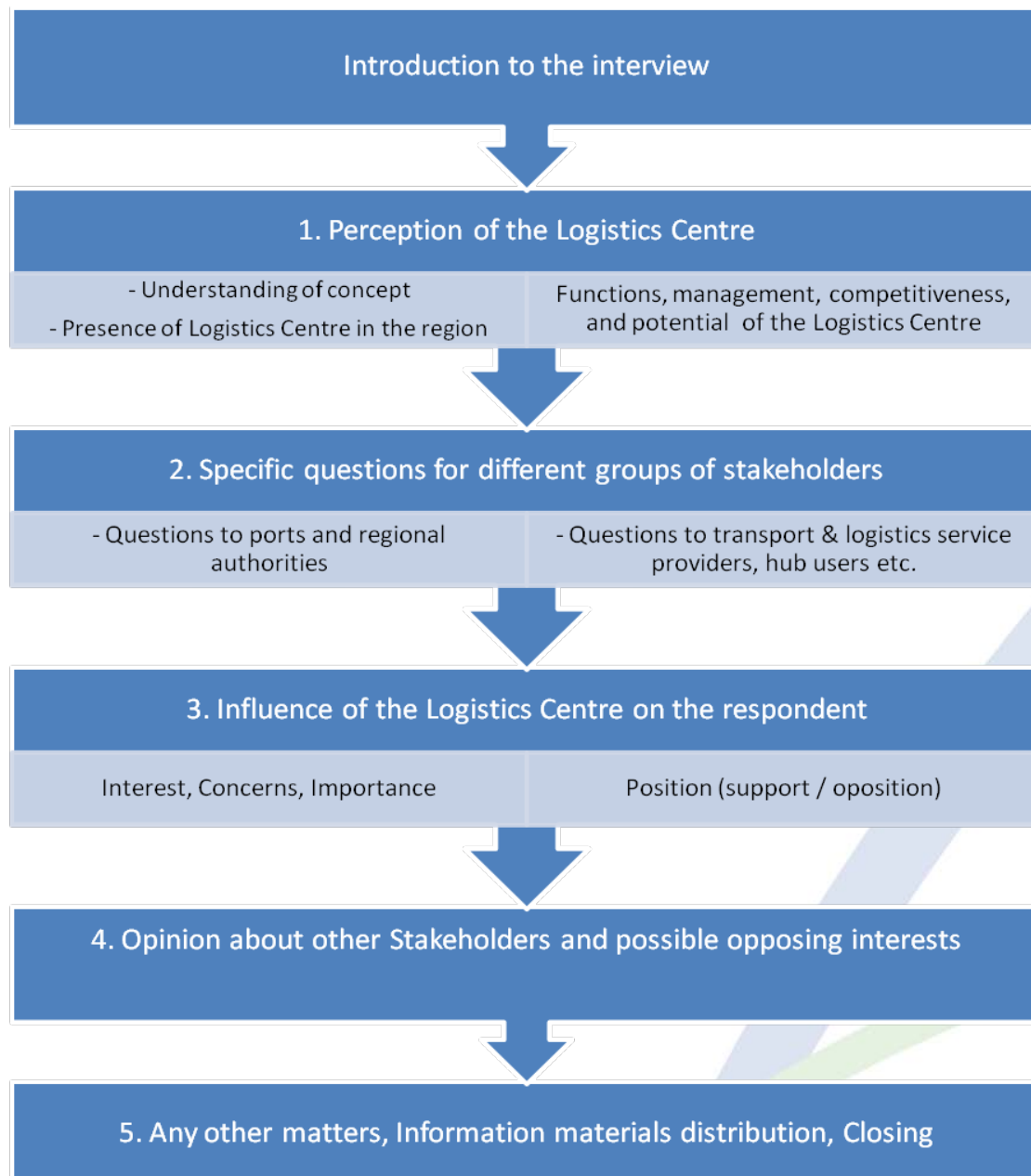
The two big blocks of questions concerned respondents' perceptions of logistics centre in their regions and their interests/motives/concerns about it. Questions concerning logistics centre perceptions included:

- General understanding of Logistics Centre concept
- Opinion about Logistics Centre presence and stage of development in the region
- Evaluation of Logistics Centre functioning and management
- Impression about Logistics Centre competitiveness and perspectives, its development factors

The stakeholder analysis as such (the second big part of interview structure) contained the following discussion topics:

- Benefits and concerns of a stakeholder in relation to Logistics Centre
- Overall attitude towards Logistics Centre
- Resources which could be used for Logistics Centre purposes
- Opinion about other stakeholders

Figure 5: Interview Outline



This interview structure was used for the 16 interviews conducted in Murmansk and Arkhangelsk in August 2010. The interviews combined with awareness-rising materials distribution were held with a support from local offices of Norwegian Barents Secretariat. During the interviews most of respondents expressed their wish to stay anonymous and not to be cited in the report, which imposed certain limitations on analysis. Thus, all the answers were generalized and their relations with the sectors of activity of stakeholders could not be provided.

5 Overview of Economic Situation, Transport and Logistics in North-West Russia

This chapter will focus on analyzing the current situation and latest trends in economic conditions, natural resources and transportation system of the North-Western part of Russia with special emphasis on Murmansk and Arkhangelsk regions. First, the present economic situation of Murmansk and Arkhangelsk Oblast will be presented and the latest trends together with the economic crisis impact will be discussed.

After that the petroleum related activities on the Russian Barents shelf will be evaluated and the description of most perspective oil and gas fields will be provided. Finally, the existing transportation complex of the North-Western district of Russia will be critically assessed and recent initiatives and development in the area will be presented.

5.1 Economic Situation of Murmansk and Arkhangelsk Oblast

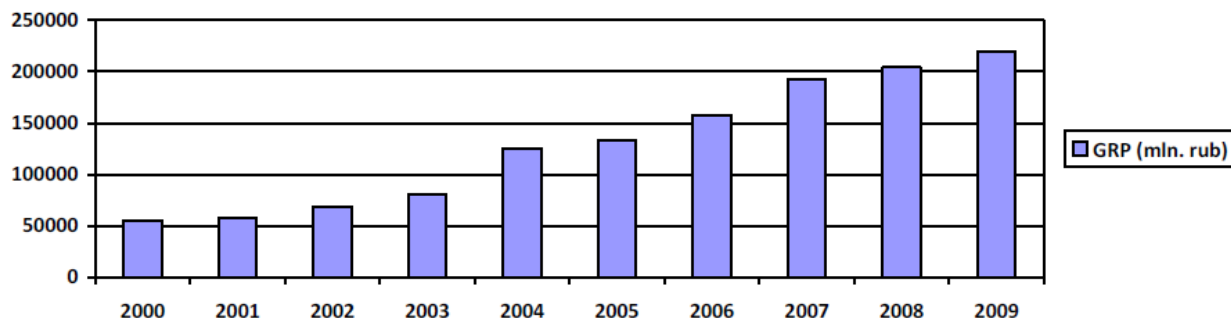
The following section will highlight the main indicators and trends in economic situation of the regions. The regional production indexes, state of affairs in main industries, and investment environment will be analyzed here.

5.1.1 Economic conditions of Murmansk Oblast

The Murmansk region is one of the most dynamically developing regions of the Russian Federation. As shown on Figure 6 the gross regional product (GRP) was significantly rising between the years 2000 and 2007. However, lately the economical crisis slowed down the production in the region. As a result, the nominal GRP in 2009 exceeded the level of 2008 only by 6.9%, and the real GRP was 3.8% lower compared to 2008. The decline in regional production is mostly a result of crisis in mining, processing industries and consumer sector. At the same time the agricultural and transport sectors improved in comparison with previous year.

Even during crisis there were no big stops of production or cut of personnel in the region, and the sufficient government support was offered to various industrial and agricultural enterprises.¹

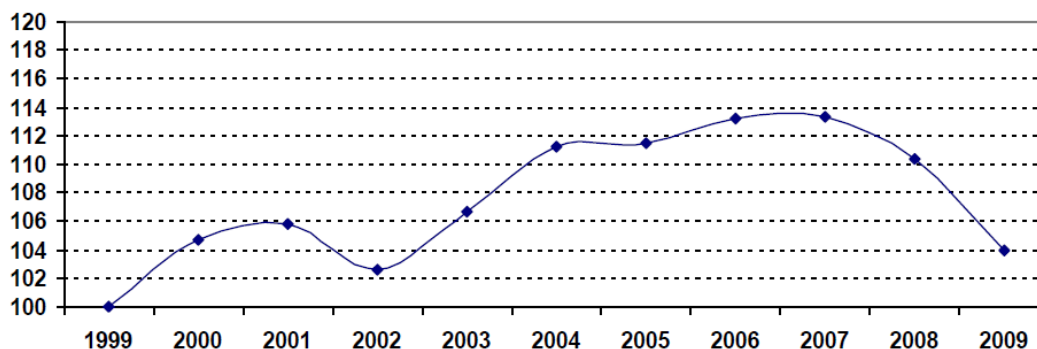
Figure 6: The gross regional product in 2000 - 2009



Source: <http://www.barentsobserver.com/barents-monitoring-murmansk-2009.4762041-116322.html>

The industrial production index, which was constantly growing between 2002 and 2007, showed in 2009 the worst dynamics in the last decade and was 93.6% compared to 2008 (in Russia in average this index was 89.2%). The index dynamics are presented in Figure 7.

Figure 7: Industrial production index dynamics 1999 - 2009



Source: <http://www.barentsobserver.com/barents-monitoring-murmansk-2009.4762041-116322.html>

Problems in the financial sector in 2009 decreased the investment activity in the region down to 83% of the level in 2008. Meanwhile foreign investments were growing and in the period January-September rose by 2.5 times in compared to 2008.² The construction sector experienced a drastic drop during the current financial crisis. Its volume cut by one third in 2009 compared to 2008.

¹ Doklad ob itogah socialno-ekonomiceskogo razvitiya v Murmanskoy oblasti za 2009 god, p. 2-7

² Doklad ob itogah socialno-ekonomiceskogo razvitiya v Murmanskoy oblasti za 2009 god, p. 1, 13

During this period only the housing stock showed a rise. The unemployment rate once one of the lowest in Russia, was in the end of 2009 close to national average and reached 7,6%. The crises also affected the actual money income of population and thus its purchasing possibility, resulting in decline of the retail trade turnover by 3% compared to 2008.

The transportation turnover amounted to 99.3% of the 2008 level. Meanwhile, sea transport increased by 12.5%. Due to the rise up in the turnover of sea transportation by 1.4 times, the aggregated cargo turnover of all types of transport increased by 24.5%.³ Due to collaboration between the government of Murmansk Oblast and JSC “Ososbiye Economiceskiye Zoni” (Special Economic Zones) the project “Complex Development of Murmansk Transport Centre” was included into Federal Program “Development of Transport System of Russia in 2011-2015”.⁴ The project is going to be implemented in the following directions:

- Development of sea transport: construction of new coal, oil and container terminals, development of fleet;
- Development of logistics and warehousing infrastructure: construction of logistics centre and distribution complex;
- Development of rail transport: construction of new rail roads and stations;
- Development of road and air transportation, including upgrading of Murmansk city roads and reconstruction of Murmansk airport;
- Additional services development: external energy supplies, maritime navigation security system, industrial security of transport centre and evaluation of environmental impact.⁵

These actions are supposed to improve transport related infrastructure in the region, increase logistics flows, and thus raise the overall attractiveness of the Murmansk Hub.

The major companies of the Murmansk region are Severonickel Combine owned by Norilsk Nickel, the Kola Nuclear Power Plant (Kola NPP), Trawl Fleet, and Murmansk Shipping Company. According to the regional government of the Murmansk Oblast the production level of major industrial enterprises by the end of 2009 almost reached pre-crisis level, showing that the

³ The Social-Economic Development of Murmansk Oblast in 2009: Report by the Murmansk office of the Norwegian Barents Secretariat, p. 6, 13-14

⁴ Doklad ob itogah socialno-ekonomiceskogo razvitiya v Murmanskoy oblasti za 2009 god, p.15

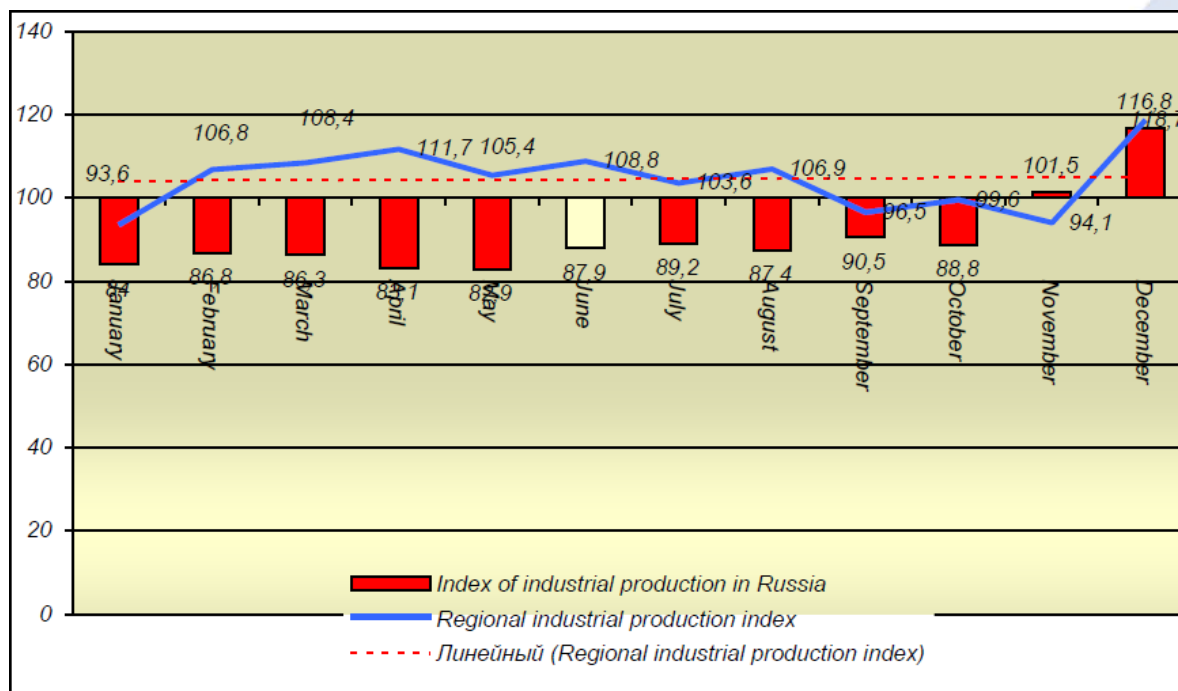
⁵ Doklad “O khode realizatsii proekta “Kompleksnoye razvitiye Murmanskogo Transportnogo Uzla””

Murmansk region has basically overcome the crisis, and is now ready to continue development as prior to crisis start.

5.1.2 Economic conditions of Arkhangelsk Oblast

The Arkhangelsk Oblast is extremely rich in natural resources and it used to show good dynamics of development in recent years. However the year 2009 was not easy for the region. The crisis affected seriously processing industries, financial sector and investments in the region. However positive dynamic in the end of the year in timber sector and energy production as well as achievements of mining industry led to the overall yearly growth of industrial production index by 3.8%. Indicators of this index as a percentage to the correspondent period of the previous year are presented in Figure 8.

Figure 8: Industrial production index dynamics in January-December 2009

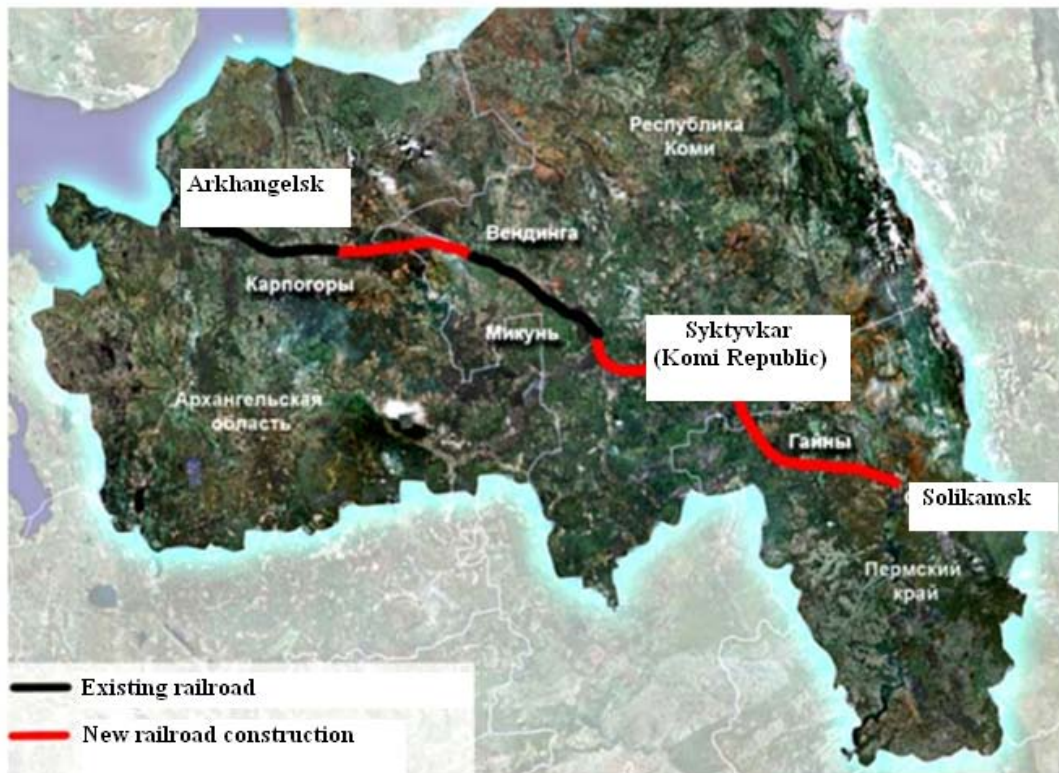


Source: <http://www.barentsobserver.com/barents-monitoring-arkhangelsk-2009.4761004-116322.html>

Recent regional policy of optimizing and diversifying economy of the Arkhangelsk Oblast resulted in a number of initiatives such as Commission on Investment Policy and Development of Competition and Law on Tax Privileges in Realization of Investment Activity on the Territory of Arkhangelsk Oblast. Besides, the Regional Government is trying to get support from the Federal

Investment Fund for the new deep water section of the Arkhangelsk Commercial Sea Port and construction of the Belkomur railroad connecting Arkhangelsk, Syktyvkar and Perm. The Belkomur railroad (see Figure 9) of 1252 km total length requires 795 km of new construction. The total investment amounts RUR 75 bln.⁶

Figure 9: Belkomur railroad



Source: <http://www.belkomur.com/en/map/4.jpg>

The major companies of the Arkhangelsk Oblast are "Arhenergo", "Solombala Cellulose and Paper Integrated Plant", "Arkhangelsk trawl fleet", "North Shipping company", "Arkhangelsk Sea Commercial Port", "Sevmash", "Zvyozdochka". In general, the region's enterprises seriously suffered from the crisis, which resulted in 16.8% losses of tax and non-tax revenues of the regional

⁶ The Social-Economic Development of Arkhangelsk Oblast in 2009: Report by the Arkhangelsk office of the Norwegian Barents Secretariat, p.2

budget. However the Oblast was included by the Federal Ministry of Regional Development in the group of 14 regions with an economy “sufficiently better than average in the country”.⁷

The dramatic decrease was observed in the construction industry and investment in the main capital where the volume dropped by almost half compared to 2008 in each sector. However the oil and gas production in Nenets Autonomous Okrug, an associated part of Arkhangelsk Oblast, increased by 24% and 15% respectively. The good situation also remains in the food industry. For example, production of meat and meat products increased by 34%, of butter – by 22% and of fish – by 12%. Meanwhile, in the transport sector the railroad cargo in 2009 decreased by 20% and the cargo turnover of the Arkhangelsk Sea Commercial Port decreased by 24% in comparison with 2008.⁸

To sum up, the last year was extremely controversial for the region. On one hand, it revealed the existing problems and caused serious losses, but on the other hand, Arkhangelsk Oblast showed better results than many other regions due to its natural resources and potential for development. The overall positive dynamics of regional development of pre-crisis years together with recent performance ensure the future growth of the region.

5.2 Petroleum related activities on Russian Shelf of Barents Sea

North-Western part of Russia is extremely rich in hydrocarbon natural resources, which raises the interest of investors and potential of the region. Recoverable potential resources of oil and gas are 22.7 billion tons in the Barents Sea. In the potential resources structure, gas-forming hydrocarbons predominate (21.6 trillion cubic meters), with liquid resources (oil and condensate) accounting for 1.1 billion tons. In the Pechora Sea, recoverable potential resources in terms of oil and gas are estimated at 4.9 billion tons. In this estimate, condensate accounts for 2.2 billion tons, and gas amounts to 2.7 trillion cubic meters.

According to Russia's energy strategy for the period up to 2020, energy policy priorities in the North-West district will focus on the oil and gas industry on the coast and the shelves of the Arctic seas. However the development of fields in the Arctic region will be challenged by difficult natural

⁷ Doklad o situatsii v ekonomike, finansovo-bankovskoy i sotsialnoy sferah subjektov Rossijskoy Federatsii v 2009 godu

⁸ The Social-Economic Development of Arkhangelsk Oblast in 2009: Report by the Arkhangelsk office of the Norwegian Barents Secretariat, p.5-9

climatic conditions and remoteness from existing oil and gas industry infrastructure, which stress a need for new technological solutions for production and transportation that guarantee among other things environmental protection. Thus, this section will be organized around major oil and gas fields' overview and transportation of hydrocarbon resources with respect to potential environmental risks. Indeed, oil and gas field development is often considered as an important stimulus for the development of the region in general and logistics centres in particular: it requires among others infrastructure improvement, logistics services of high quality and coordination of activities of all involved parties.

5.2.1 Oil and Gas Fields overview

Some of the currently developing fields are described above. Their location in the Barents Sea shelf is presented in Figure 10.

Figure 10: Gas and Oil Fields of Russian Shelf



Source: Transportation of Oil from Russian Part of Barents Region (Report)

The Prirazlomnoe oil field

The Prirazlomnoe oil field is located in Russia's European Arctic Continental shelf south of Novaya Zemla in the Pechora Sea, 60 km from the Varandey settlement (Nenetsky Autonomous District), 950 km from Arkhangelsk and 1025 km from Murmansk. The field, which is situated at a depth of 19-20 m, was discovered in 1989. The development license was won by Rosneft in 1993 and transferred to Sevmorneftegaz in 2002. Recoverable oil reserves from the Prirazlomnoe field are estimated at 83.2 million tons, with the maximum volume extracted annually amounting to 6.5 million tons.

The Medynsko-Varandey licensed area

The Medynsko-Varandey section, covering a total area of 2,405 square km, is situated in the south-eastern part of the Barents Sea, in the shallow waters of the Pechora Sea with depths of up to 19 m. The field opened in 1997 is situated 1,000 km from Murmansk and 410 km from Naryan-Mar. The area has 6 basic structures, three in each of the sub-sections.

The Kolokolmor and Pomor licensed areas

These fields are situated in the southern part of the Pechora Sea. The Kolokolmor area extends to 1,540 square km, Pomor field covers 1,677 square km. The distance to Naryan-Mar is 200 km, and to Murmansk - 800 km. The estimated recoverable resources amount to 300 million tonnes of oil. The fields consist of a great number of seams, with hydrocarbons being found at depths ranging roughly from 1,000 to 4,000 m.

The Dolgin oil field

The Dolgin oil field was discovered by Gazprom in 2000. This field is large-scale and borders the Prirazlomnoe oil field. In 2005, Gazprom obtained the license to utilize this area of the subsoil for the purpose of prospecting and extracting mineral resources.⁹

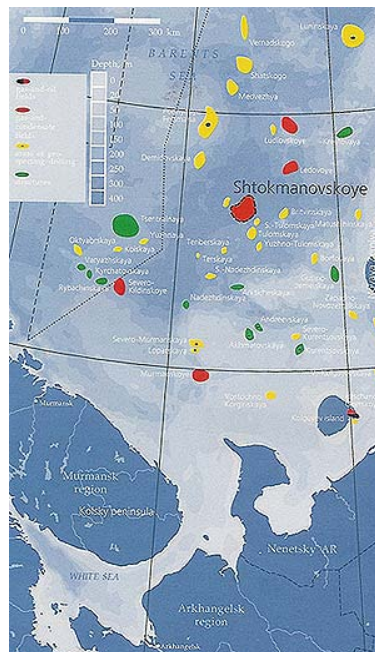
⁹ http://www.bellona.org/reports/report/russian_arctic_shelf Offshore Oil and Gas Development in Northwest Russia: Consequences and Implications, Ch.1, p.10-16

The Shtokman gas condensate field

A field which attracted the most attention in recent years is the Shtokman gas condensate field, which is located in the central part of the Barents Sea, 650 km northeast of Murmansk, 920 km north-east of Arkhangelsk and 290 km to the west of Novaya Zemlya (See Figure 11). The hydrocarbon seams discovered in 1988 are situated at a depth of 1,900-2,300 m. It is suggested that the stable extraction of gas may be possible for 50 years. The field covers an area of 1,400 square km and the sea is 300-380 m deep. The field's reserves amount in total to 3.66 trillion cubic metres of gas and 30 million tons of condensate. When operating at maximum productivity, the planned volumes recovered from the Shtokman gas condensate field may vary from 71 to 94.6 billion cubic meters per year.

It is anticipated that the Shtokman field will require three or four phases for full field development. The development will include up to four platforms. It is estimated that the total number of wells required to develop the Shtokman will be around 156, which breaks down to 144 production wells, three monitor wells and nine reserve wells.¹⁰

Figure 11: The Shtokman gas condensate field



Source: <http://www.offshore-technology.com/projects/shtokman/shtokman1.html>

¹⁰ <http://www.offshore-technology.com/projects/shtokman/>

Initially Gazprom which has a license for development of Shtokman together with Total and Statoil hoped to put the field on stream as early as 2010. However, lately those plans were revised. Strengthening of alternative suppliers of gas, a fast growth of production of shale gas in USA and a decrease in exports to the EU countries have decreased Gazprom exports in 2009 by 11.4% up to 140 billion cubic meters. Thus the turnover in 2009 dropped to 40 billion dollars which is a large cut compared to 64 billion dollars in 2008.¹¹ Following the US statistics the average price for liquid natural gas (LNG) there dropped from 350 dollars per 1000 cubic meters in 2008 to 160 dollars in 2009.

As a result, final investment decision about gas production in Shtokman will be taken in 2011 and the extraction in the field will start in 2016.¹²

5.2.2 Transportation of gas and oil in Northwest Russia and related environmental risks

Currently the transportation of oil and gas in Northwest Russia is based on the transshipment by tankers of various dead weights using offshore and coastal terminals. The network of terminals includes such offshore transshipment complexes as the “Belokamenka”, tanker holding lagoon and coastal terminals in the ports of Murmansk, Arkhangelsk, Vitino and others. Supplies of oil transported by tanker are directed for export to Europe and the USA. Besides, significant volumes of oil from fields in the Timan-Pechora province are transported by a system of pipelines. However pipelines in Northwest Russia are located sufficiently far from such ports as Murmansk, Arkhangelsk and Vitino and, that is why petroleum products are transported from there by rail in tank wagons.¹³ Thus, cooperation between ports and railways become extremely important.

An increase in the volume of oil and gas transported in Northwest Russia requires among others the improvement of measures preventing and eliminating oil spills, as well as the establishment of an effective ecological monitoring system. Increased oil and gas activity raises the risk of accidents and the vulnerable environmental conditions that have to be taken into account.

¹¹ <http://www.barentsobserver.com/index.php?id=4725683>

¹² <http://vremya.ru/2010/29/8/247733.html>

¹³ http://www.bellona.org/reports/report/russian_arctic_shelf Offshore Oil and Gas Development in Northwest Russia: Consequences and Implications, Ch. 2, p.18-19

The risks associated with development of oil and gas fields and transporting of oil and gas are considerably higher on the Continental shelf of the Russian Federation, than in other regions because of the following factors:

- difficult natural climatic conditions;
- technologies and equipment employed;
- inadequate level of infrastructure development;
- large number of freight operations, caused by small tankers operating in Russian waters reloading to super tankers used for export.

The field development process results in large quantities of emissions into the atmosphere and the marine environment. Oil and gas activity is one of the main sources of greenhouse gases which form from burning fossil fuels and cause climate change. When a field is exploited over a long period of time and intensive depletion of the rock occurs, the risk of seismic activity in neighboring territories increases.

Besides, the technical implementation of the system for transporting oil and gas affects the environment. The intensive load placed on the main pipelines in Northwest Russia has resulted in pipeline fatigue which requires significant maintenance. However, statistics show that the transport of oil by tanker is as dangerous as pumping it by underwater pipeline. Accidents which occur when transporting oil and gas in railway tank wagons can lead to devastating fires, contamination of drinking water, destruction of ecosystems, extinction of living organisms and human losses.¹⁴

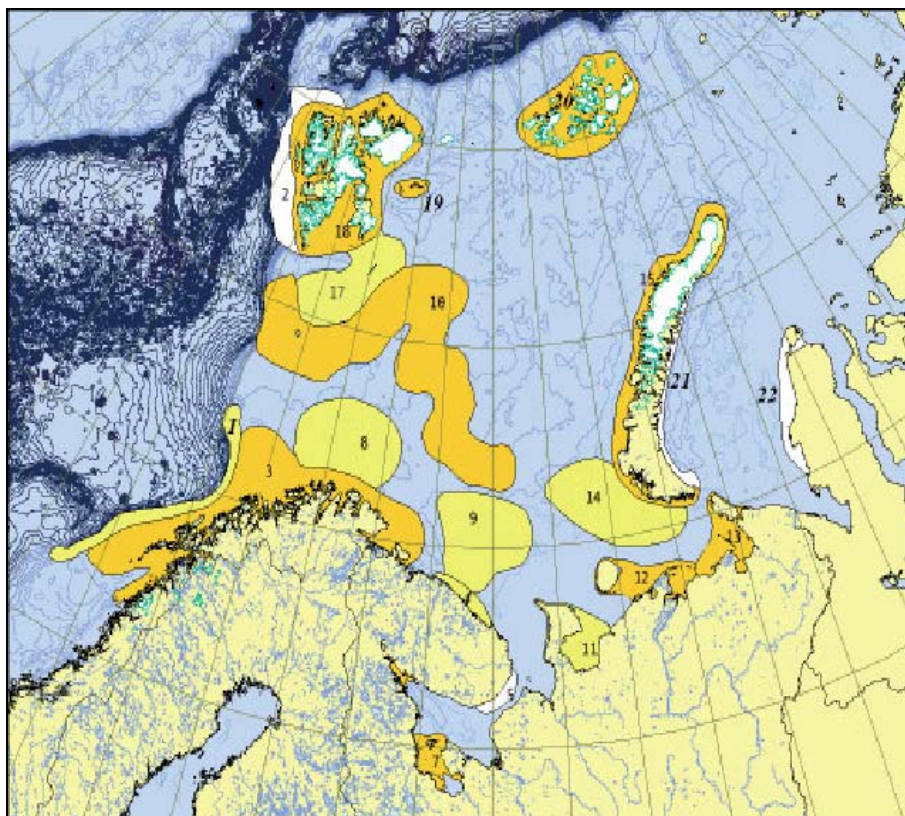
It also needs to be taken into account that the diversity of bio-organisms in the Barents region has to be preserved. The priority regions in this matter are presented in Figure 12.

In general, in everything concerning ecological impact again cooperation between all involved parties is required in order to eliminate risks and keep possible negative externalities under control. Common efforts and new technological solutions will help to promote regional sustainability and prosperity.

¹⁴ http://www.bellona.org/reports/report/russian_arctic_shelf Offshore Oil and Gas Development in Northwest Russia: Consequences and Implications, Ch. 3, p.10

Figure 12: Priority regions for preserving biodiversity in the Barents Sea ecoregion

(Dark yellow - of extreme priority, yellow - high priority, white – priority)



Source: The Barents Sea Ecoregion. A biodiversity assessment, WWF

To sum up, the active development of the oil and gas fields in the Russian Arctic will require a lot of effort and consideration. However it will be followed by development within the consumption, production and generally result in the further socio-economic growth in the regions. From the transport perspective it means that the existing capacities will be actively used, and the new ones will be required. The general upgrade and enlargement in the transport system of the North-West Russia is expected.

5.3 Trends and Policy in Transport of North-Western Russia

The North-Western federal district of Russia is a transportation “bridge” between Russia, the European Union and Asian states, which supports intra and interregional connections. Taking into account the increase in international trade and volumes of goods to be transported, the pressure for the existing transportation system will grow. Thus its further development and upgrading is of vital importance. This section will be organized in a following way: first the overview of the existing

transport complex will be presented, and after that the development projects and policy, with a special emphasis on sea transport, will be discussed.

5.3.1 Transport complex overview

Currently the total length of railways in the district exceeds 13,000 km, roads – 110,000 km, and inland water-ways – 13,500 km. The region is served by Oktyabrskaya, Severnaya and Kaliningradskaya Railways. Oktyabrskaya Railway covers among others Murmansk region, while Kaliningradskaya is present in Arkhangelsk Oblast. The main goods transported by the railways are coal, iron, oil products, construction materials, timber and chemicals.

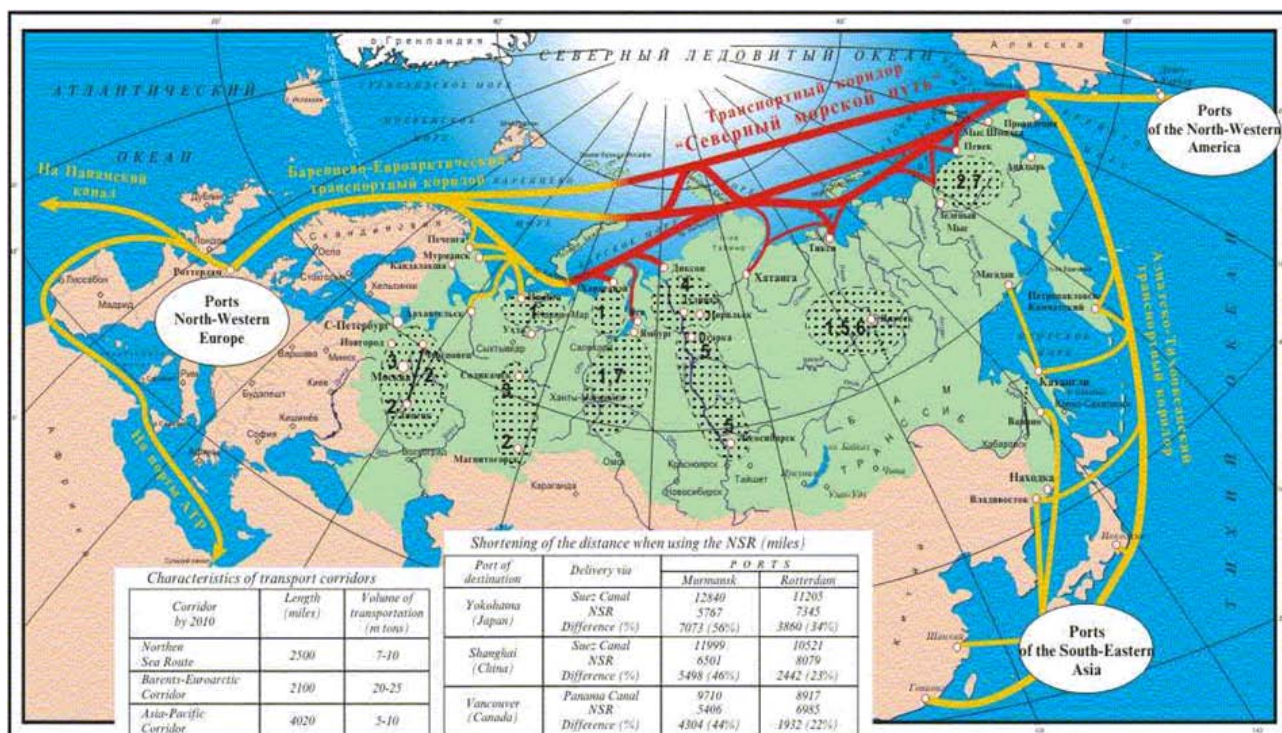
The biggest ports of North-West Russia are Saint-Petersburg, Arkhangelsk, Murmansk, Vyborg, Vysotsk, Primorsk, and Ust-Luga. Container shipments are expected to become the most dynamically developing form of shipment, because the parameters of standard container are the basis for global warehousing and distributing technologies. Containerization enhances the speed of the cargo processing, increases safety and decreases transportation costs. The territory of the North Western federal district hosts the Northern Sea Route (NSR).

Northern Sea Route (see Figure 13) is the shortest maritime route between the European part of Russia and the Far East (5600 km), which is extremely important for both Russia and its foreign partners. The interest of foreign shipping companies and other businesses is determined by two major factors. First of all, due to the recent global warming it may become a more economically profitable alternative to the existing route between Europe, the Far East and North America as the strait will be ice-free over longer periods of the year. Secondly, it is attractive for them as a way to transport mineral raw materials from Russian Arctic regions. In September 2010, the Danish-Norwegian ship is performing a test sail along this route.

As for the Russian Federation, the Northern Sea Route is a key to the rich natural resources of the North, Siberia and the Far East. The neighboring with NSR regions possess 35% of the world stocks of oil and gas. The most successful development of the Route took place at 1980s when the whole transport system was created, including ice-breaking, transportation and technical fleet, port terminals, meteorological service, navigation and radar systems, construction industry and ship-building plants. Transportation volume reached almost 7 million tons in 1987. However in 1990s

the system was decentralized and infrastructure degradation started. Nowadays the revival of the NSR requires governmental investments in infrastructure, legislative innovations and active collaboration between regions.

Figure 13: Northern Sea Route



The **main problems of transport system** of the North-Western Russia which decrease its competitiveness on global market are the infrastructure degradation, difficulties in unified development of all elements of transport system, non-effective interaction between different modes of transportation. Meanwhile the increase in international cargo flow demands to use more efficient methods of transportation organization. For instance, over 20% of all cargoes in Europe are containerized.¹⁵ However, organizational issues as lack of interaction between railroads and sea transport, long documentation proceeding time and low automation in information transfer prevent adequate development in international container transportation in the region. This illustrates a need for logistics centers in North-Western Russia which will optimize and harmonize cargo flow through different modes of transportation and support this flow from information and organizational perspective.

¹⁵ Lobko, Osminin, Yeliseev, Nikiforova, Problems of the Transport Complex in the North-Western Region

5.3.2 Development policy

In 2008 the President signed “The National Policy in Arctic Region for the period up to 2020 and ahead” where the use of NSR was indicated as a major national interest in the Arctic region.

In recent years Russian national maritime policy was determined by the range of adopted documents, such as:

- Maritime Doctrine of Russian Federation for the period up to the year 2020;
- Federal Program “Mirovoj Okean” (Global Ocean);
- Strategy of National Security of Russian Federation for the period up to the year 2020;
- Concept of Long Term Social-Economical Development of Russian Federation for the period up to the year 2020.

These documents mark the priorities in development of sea regions and define the maritime potential of the country, resulting in overall social-economical development of these territories.¹⁶

The great attention has been drawn lately to the development of Russian ports at the North. The major projects concerning Northern ports are:

- complex development of Murmansk Transport Hub with an expected increase in turnover up to 48 million tons per year (in 2009 – 37.4 million tons), including 30 million tons of oil products, 15 million tons of coal and 3 million tons of containerized cargoes;
- development of Arkhangelsk port, including construction of new deepwater port section for shipping hydrocarbon materials from the North.¹⁷

Both projects include considerable investments into port and other related infrastructure financed partly from federal budget and partly by private investors.

5.4 Overview of Murmansk and Arkhangelsk Ports

In the following sections structures, capacities, and facilities of Murmansk and Arkhangelsk Sea Ports will be described.

¹⁶ <http://www.morskayakollegiya.ru/morsk/morsk/arctic/>

¹⁷ <http://www.severinform.ru/index.php?page=newsfull&date=18-02-2010&newsid=106677>

5.4.1 Murmansk Commercial Seaport

Open Joint Stock Company “Murmansk Commercial Seaport” was established in 1994 on base of the public enterprise and nowadays it is the biggest company in Murmansk, second biggest port of North Western Russia (after Saint-Petersburg) and forth biggest Russian port in terms of cargo flow. Murmansk Commercial Seaport has 17 berths with a total length of 3000 m. Berths’ depth and length allows to receive and handle ships with 15,5 m draught and more than 265 m in length.

The port is equipped with modern handling facilities: gantry cranes with the capacity up to 40 tons, ship-loader for handling of apatite concentrate with the capacity more than 1000 tons per hour, fork trucks with the capacity from 1.5 to 45 tons. To provide auxiliary operations the Port has roll-trailers, tractors, haulers, bulldozers. The scheme of the Murmansk port is presented in Figure 14.

Figure 14: Scheme of the Murmansk Port



Source: http://www.portmurmansk.ru/img_popup.phtml?img_url=/imgs/gallery/port_big.jpg

The cargoes handled by Murmansk Commercial Seaport include:

➔ Non-containerized goods:

- non-ferrous metals and alloys in packages (aluminium, copper, nickel);
- rolled ferrous metals;
- coal in bulk;
- apatite concentrate in bulk;
- alumina in bulk;
- scrap and iron- ore pellets in bulk;

➔ Containerized goods:

- chemical products in bags and big-bags;
- materials of construction;
- foodstuffs;
- technological equipment in cases and without packing;
- different cargoes in containers ISO-20 and ISO-40.

The port possesses open and covered warehouses with the capacity of 130 000 and 21 000 square meters respectively. The turnover of Murmansk Commercial Seaport in 2009 exceeded 15 million tons, with the biggest cargo flow for coal (12.2 million tons), apatite concentrate (1.7 million tons), and non-ferrous metals (0.4 million tons).

During the last years Port of Murmansk was extending storage areas, modernizing gantry cranes and other facilities, which resulted in loading of great tonnage vessels with the deadweight more than 140 tons at the berths of the port. The Port has put into operation 3 new specialized plants for cleaning, crushing and sorting of coal.

95.8% of cargo turnover of the port go for exports. In 2010 in addition to the mainly handled cargoes the Murmansk Commercial Seaport plans to start to accept and handle cargo for exploration of the Shtokman field. The main activity of the port today is transshipment of coal. Murmansk Commercial seaport is the greatest and the only big transshipment point of coal in the North of the country. Currently it handles more coal than ports of Saint-Petersburg, Kandalaksha, Vyborg and

Vysotsk all together. The main export receivers are countries in West Europe, in particular: Spain, Netherlands, Belgium, France, and Great Britain.¹⁸

5.4.2 Arkhangelsk Sea Commercial Port

Joint Stock Company "Arkhangelsk Sea Commercial Port" is a multi-type trade port handling and shifting following types of cargo: general cargo, containers, cupboard, cellulose, and timber products, metals, fertilizers, heavily-loaded equipment, poured and piled cargo. The port capacity allows a cargo turnover of 4.5 mln tons per year. The total length of the berth front is 3.4 km. Port berths can receive vessels of 9.2 m draught and 175 - 190 m in length. Total covered storage area of the port amounts to 57.055 square meters, and open paved areas are 373.263 square meters.¹⁹

The modern container terminal includes an open territory of 98.000 sq meters, where 5762 TEUs may be stored at the same time, including up to 200 refrigerator containers and 2200 containers with dangerous cargo. The container terminal capacity is 75.000 TEUs per year.²⁰ The crane park of the Port consists of 50 units with lifting capacities from 5 to 40 tons, and a floating crane with a lifting capacity of up to 100 tons. The inventory of minor mechanized equipment consists of 86 loaders with lifting capacities ranging between 1.5 and 25 tons. The port is serviced by three stations of the Northern Railroad.²¹ The structure of the port is presented in Figure 15.

The loading/ unloading area «Ekonomia» is situated 25 km away from the centre of Arkhangelsk. It operates seven berths with the overall length of 1162 meters. Fixed depths provide safe pilotage and convenient moorage for vessels with carrying capacity up to 25 000 tons and draft up to 9.5 meters. The main list of cargo handling includes containers, pulp and paper, plywood, construction material, chemical load, timber, fertilizers, equipment and bulk cargo. The cargo safety is provided by twenty-four-hour service of the special paramilitary Security Service.²² The scheme of the Ekonomia area is presented in Figure 16.

¹⁸ <http://www.portmurmansk.ru/index.phtml?3>

¹⁹ <http://www.ascp.ru/htm/5.htm>

²⁰ <http://www.arhport.ru/eng/com-ascp.htm>

²¹ http://www.ascp.ru/en_htm/5.htm

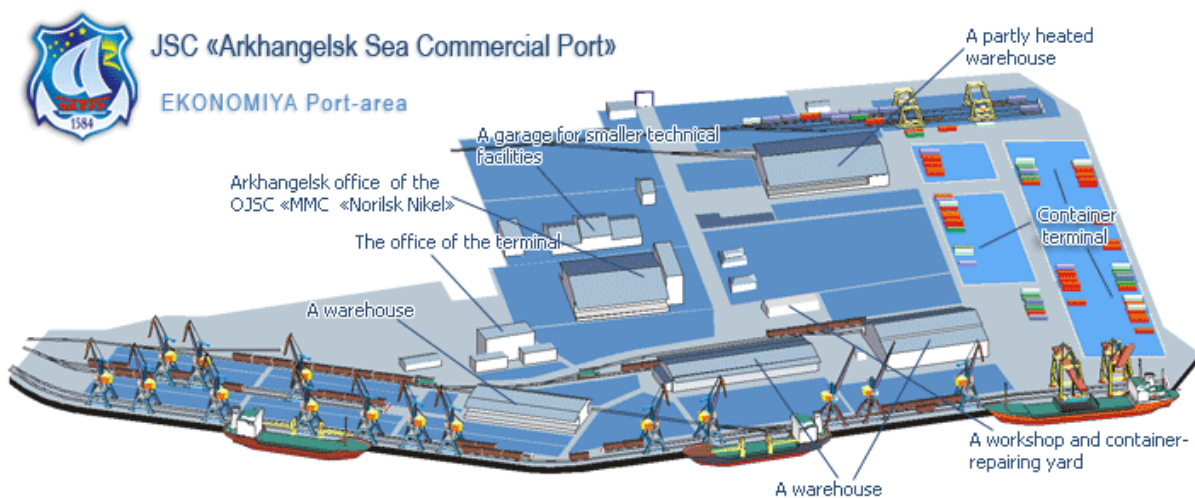
²² http://www.ascp.ru/en_htm/st1.htm

Figure 15: Structure of Arkhangelsk Sea Commercial Port



Source: http://www.ascp.ru/en_html/6.htm

Figure 16: Scheme of the Ekonomia Port-area



Source: http://www.ascp.ru/en_html/sxema_Ekonomia.htm

The port-area of «Ekonomia» possesses the container terminal which allows container shipment to any port due to liner containerships of Northern Shipping Company. Every 10 days one of the vessels works on the following lines: Arkhangelsk – Rotterdam – Antwerp– Arkhangelsk, Arkhangelsk – Antwerp – Bremen – Hamburg – Arkhangelsk. Every month the vessels work on the line Arkhangelsk – Liverpool – Arkhangelsk. Through these ports cargo can be delivered to any

point of destination. Transit time of cargo transfer from main ports of Europe to Moscow through the port of Arkhangelsk amounts to 14-17 days. Transshipment execution at the port takes 2 days. Customs clearance of the cargo takes 3 days.²³

The loading/unloading area «Bakaritsa» of Arkhangelsk Sea Commercial Port is located on the left bank of the Northern Dvina river. The area specializes in transshipment of all kinds of cargo to arctic destinations, as well as pulp and paper, plywood, timber, coal, scrap metal. The area is served by two railway stations, «Arkhangelsk» and «Bakaritsa». The district «Bakaritsa» encloses cargo section «Levy bereg», containing 2 berths with the total length of 360 meters. The basic range of handled cargo includes coal and scrap metal.²⁴ Scheme of Bakaritsa area is presented in Figure 17.

Figure 17: Scheme of the Bakaritsa Port-area



Source: http://www.ascp.ru/en_html/sxema_Levy.htm

Shipping company «Portoflot» operates as a service organization providing mooring, provisions, and oily waters and dry waste removal for the vessels of transport fleet in the port of Arkhangelsk. Since 1995 the Portoflot vessels, apart from traditional intra-port works, are employed at coastal traffic of all cargo types and sea towages at White, Barents and Kara Sea basins. In 2002 the Shipping Company was certified by the Russian Maritime Registry of Shipping, and entered

²³ http://www.ascp.ru/en_html/st3.htm

²⁴ http://www.ascp.ru/en_html/st2.htm

international database of shipping companies. «Portoflot» fleet consists of seagoing bunkering tanker, sea tugs, self-propelled sea pontoon, and sea deck-barge.²⁵

A marine passenger terminal is situated in the centre of Arkhangelsk and serves sea and river passenger ships, as well as vessels operating at a popular tourist route Arkhangelsk – Solovki.²⁶

²⁵ http://www.ascp.ru/en_html/st4.htm

²⁶ http://www.ascp.ru/en_html/st5.htm

6 Evaluation of cooperation between stakeholders

The following chapter will focus on the analysis of the data obtained during the survey conducted. All the data collected through fax, e-mail, and combined distribution will be taken into consideration. The full English and Russian versions of questionnaire can be found in the Appendix 1 and 2.

The analysis was conducted for Murmansk and Arkhangelsk separately, since two separate logistics centers are about to be established and thus it is very important to differentiate results even despite seemingly little amount of returned completed questionnaires. Thus this chapter will be organized in the following way: the first part will be devoted to results obtained in Arkhangelsk; the second part will focus on Murmansk; finally the third part will provide the evaluation of cooperation between stakeholders in the regions. It is important to keep in mind that the analysis focuses not on frequencies or statistically valid distribution, but rather on stakeholders' opinions and the most often met variants resulting at general evaluation of cooperation.

6.1 Results obtained in Arkhangelsk

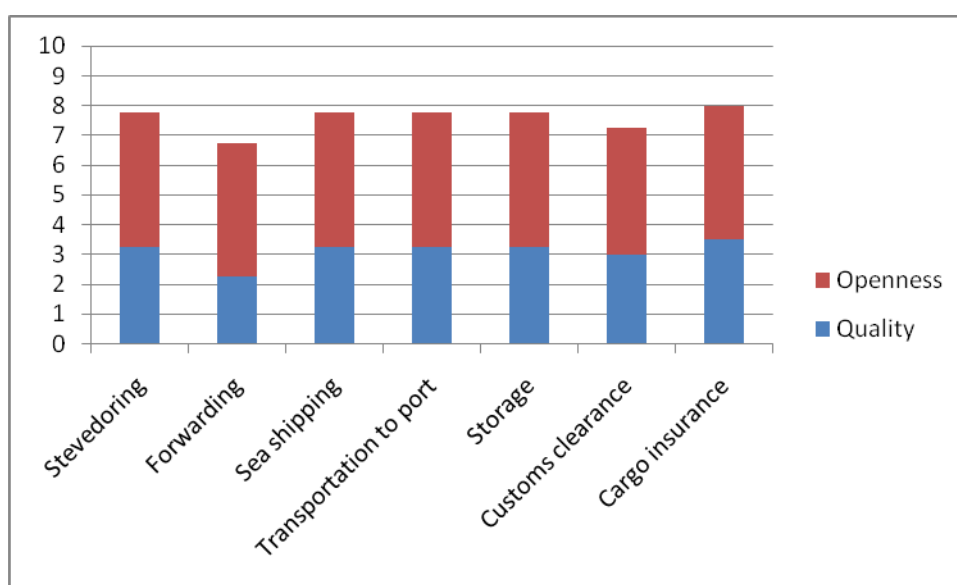
Following the elaborated methodology and the questionnaire structure we will start our analysis by general presentation of respondents.

6.1.1 Characteristics of respondents and their evaluation of hub factors in Arkhangelsk

The responses in Arkhangelsk were mostly obtained from private companies, but also one mixed private-public organization filled in the questionnaire. All of the respondents operate in transport related sectors, such as transport, sea transport and forwarding. Apparently, only transport companies which are directly interested in creation of logistics centre took part in the survey. This implies certain limitations to analysis, but on the other hand gives input for evaluating the level of cooperation. It means that the interests of providers and users of logistics services in the region are not the same, and the level of awareness among service users is low. One third of respondents are big companies with more than 100 employees, while the rest consists of medium sized organizations (21-50 employees).

Now speaking about evaluation of transport related services in the region, respondents estimate most of them on satisfactory level (around 3 out of 5). However, there is a clear connection between the opinions and the type of the company. Private companies grade services very similarly to each other and generally lower than mixed organization. The openness of services is estimated between “fully open” and “somewhat open”. Meanwhile, the best grades in both openness and quality were given to cargo insurance, the worst – to customs clearance and forwarding, as reflected on Figure 18.

Figure 18: Evaluation of transport services in Arkhangelsk



The infrastructure of the region was evaluated in a similar way with higher grades given by private-public organization. Railways and warehouses’ evaluation was between good and satisfactory, while inland waterways and roads were evaluated in the range of satisfactory and unsatisfactory.

According to respondents, the demand sophistication in the region is quite high. This means that respondents’ clients care about timing/speed, frequency, quality of service as well as environmental issues and innovation level. However the most important criteria - graded in average for 4.5 out of 5 - are *ability to provide service on time and following quality standards*. As mentioned in theoretical chapter, demand sophistication is one of factors enhancing cluster development, which in relation to relatively weak or at least average condition of infrastructure in the region creates certain challenges and need for clustering.

A wide spread of answers was received for the question concerning competition. Some respondents consider it as moderate, others – as serious or very tough. Even though almost all respondents indicated transport as their industry, they are not direct competitors to each other. It is more likely that respondents' services are complementary to each other. This assumption is also proven by the fact that some respondents are actually involved in common project with other companies belonging to the same industry as them. One example of such collaboration is delivery of oil products to Extreme North regions. By the way, high competition level is also a stimulating factor for companies' and cluster's development in order to satisfy sophisticated demand. Interestingly, only one of the respondents confirmed the collaboration with academic or governmental institutions. Unfortunately, this respondent chose not to specify what kind of common projects it runs together with those organizations.

6.1.2 Cooperation between hub stakeholders in Arkhangelsk

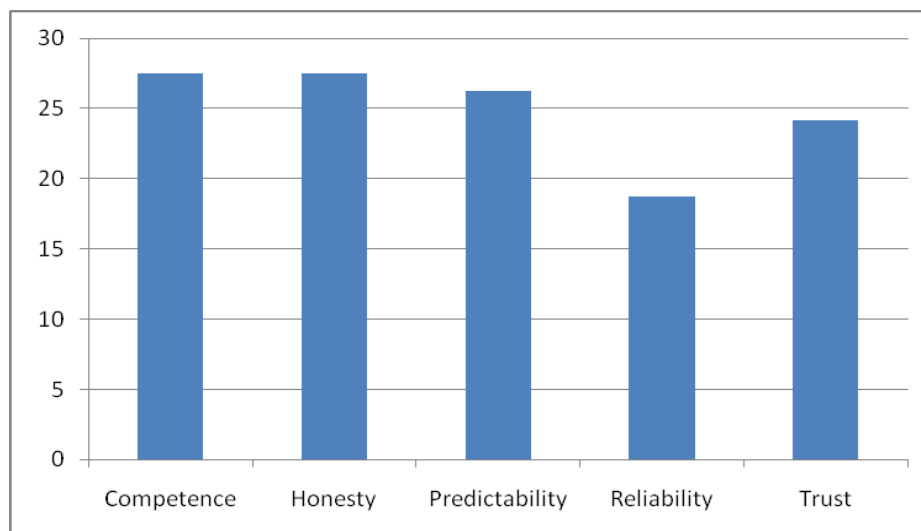
Now we will measure cooperation itself within the Arkhangelsk region between potential logistics centre stakeholders. In order to measure closeness of interactions (as suggested in the methodological part) we will have a look at their frequency and character (formal/informal). The results show that interactions with clients, transport and logistics service providers are the most frequent (in average several times a month), while respondents interact with academic and research institutions only few times a year or more seldom.

The character of interaction is in most cases *formal*. However sometimes communications are personalized via use of technology (e-mail, fax). One respondent mentioned interactions on both formal and informal levels on one-to-one basis. However none of respondents marked informal, social level. As mentioned in the theoretical chapter the involvement in social interactions can enhance information flows and development of common norms and cultural environment. However, it is missing in the Arkhangelsk region, where actors prefer to limit themselves by formalities. The same observation was made during data collection when it was extremely hard to get through to the correct contact person when making a reminder call.

The next measure of cooperation is trust, which indicators are reliability, predictability and honesty. In the survey the question about expectations of partner's behavior was aimed to measure these categories. However, an extra option called "being capable and competent" was added to variants in

order to make the question not too obvious and allow comparison between different qualities. The respondent answering this question were expected to divide 100 points between 4 categories. Results are the following: respondent pay the greatest attention to competence of counterparts as well as their honesty. At the same time ability to offer help when needed is not strongly requested from partners. The biggest dispersion in answers was obtained in predictability category: some consider it as the most important (with 40 points – which is absolute maximum of all grades in all categories), while others care about it twice less (20 points). To sum up, the overall aggregated importance of trust related indicators (24.16 points) is less than that of competence (27.5 points), what underlines the findings mentioned above: actors in the region are more result-focused than relationship-oriented. Those results are also presented in the Figure 19.

Figure 19: Average importance of trust, its elements, and competence in Arkhangelsk



Yet another measure of cooperation according to scientific literature is retrieved from the respondents' previous experience / satisfaction from previous interactions. Cooperation with clients, transport and logistics service providers brought the best anticipated results to respondents. Interestingly, respondents cooperate the most often exactly with the same groups of partners (see frequency of interactions). Again, collaboration with governmental and research institutions receives little attention from the respondents. Speaking about the goals of cooperation, the respondents expect an increase in exports, employment and attraction of firms and investment in the region.

6.1.3 Perception of Logistics Centre in Arkhangelsk

Now we will analyze the last block of questions in the survey concerning perceptions of a logistics centre. All of the respondents feel that they belong (either fully or to some extent) to some kind of logistics centre. This can be explained by the fact that the respondents are transport and logistics related companies which are significantly interested and aware of hub concept and development. However the impression on whether or not being part of a hub provides certain benefits differs from one respondent to another. This mainly refers to increase in employment, export and reduction of production costs. Some respondents say they are fully provided by the hub, while others only see little presence of those advantages. Increase in innovation and help with seeking funds were mentioned as somewhat present, while improvement of business environment and attraction of new companies seems to be sufficiently provided. However, none of the benefits is considered to be fully provided by the logistics centre by any of respondents.

The last question of the survey was supposed to reveal the bottlenecks of the logistics centre. For this reason respondents were asked to mark the 3 most important, on their opinion, problems out of 10 suggested (one allowing respondent's own variant). The findings show that almost all respondents are concerned with poor economic situation in the region, infrastructure condition and lack of government support. Half of respondents also mentioned insufficient financing and ineffective management. However lack of competence, cooperation between participants and new ideas were not named by anyone. Narrowing answers down to the main focus of this paper, respondents believe that there is sufficient level of cooperation between them for cluster development. Alternatively it can mean that the respondents simply do not consider cooperation as an important issue.

6.2 Results obtained in Murmansk

In the following section the similar analysis will be conducted for the Murmansk region.

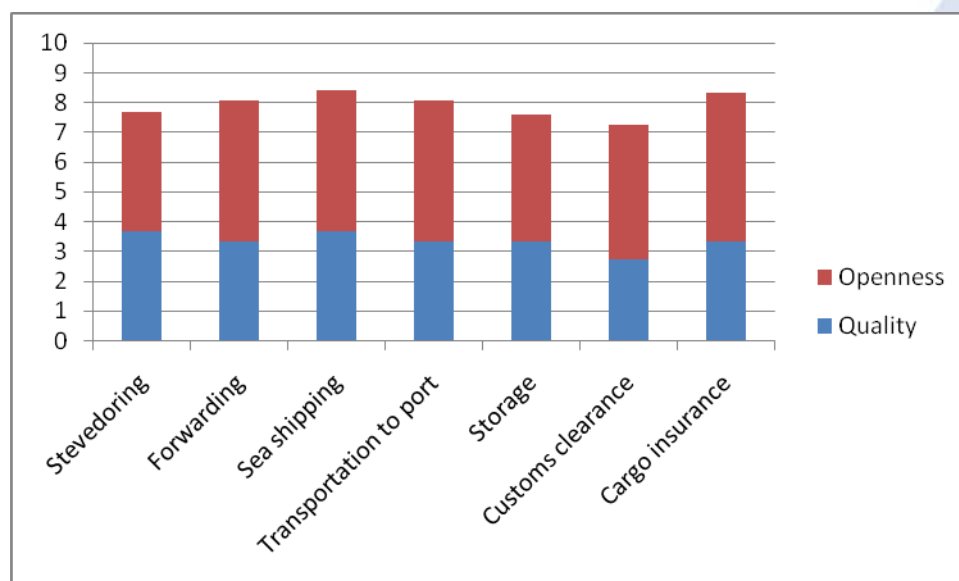
6.2.1 Characteristics of respondents and their evaluation of hub factors in Murmansk

Two thirds of the respondents represent private companies while one third of them represent mixed organizations. Some respondents come from large organizations with more than 100 employees, while others represent medium sized companies with 51-100 and 21-50 employees. However, in

Murmansk bigger differentiation in industry belonging was reached including answers from the consultancy sector, transport and chartering, port activities.

Interesting results were obtained while evaluating quality and openness of logistics and transport services in the region. Even though average grade for all the service was “satisfactory”, a clear connection between the industries, which the respondents represent, and the answers, is evident. For instance, only port authorities assess such services as storage in port, stevedoring and forwarding as good. Others put lower grade to those services. Speaking about openness of these services, it is the highest for cargo insurance (everybody considers it as fully open). Forwarding, sea shipping and transportation to the port are also accessible for everybody who needs them. Opposite to the results obtained in Arkhangelsk, customs clearance in Murmansk seems fully accessible to 66.7% of the respondents. And the least accessible services according to survey results are stevedoring and storage in ports. Not even all port representatives call them fully open. Consolidated results for transport related services’ quality and openness are presented in Figure 20.

Figure 20: Evaluation of transport services in Murmansk



Coming forth to the condition of infrastructure in the region, again none of the respondents assess any element as excellent. However, inland waterways and railways are between satisfactory and good level. A worse situation was found for distribution centers and roads, which condition, by some respondents, was assessed as unsatisfactory.

Judging by obtained responses, demand sophistication in the region is high, especially when it comes to following quality standards and ability to provide the service on time and with necessary frequency. However environmental concerns and innovation capability are requested to smaller extent. Similar findings were obtained in Arkhangelsk, which shows a generally result oriented approach to business. Transport and consulting companies believe that the competition in their industries is moderate while ports representatives see almost no competition for their organizations at all. Those findings are very different from Arkhangelsk region, where the perceived competition level was much higher.

Only one respondent claims that his company is involved in common projects with organizations belonging to the same industry. An example of such cooperation is the consortium named Murmanshelf, which is arranging logistics solutions for hydrocarbons transportation from Russian shelf of Barents Sea. Half of the respondents collaborate with governmental institutions. However quite vague answer “collaboration within special projects” was obtained for the open-ended clarification question.

6.2.2 Cooperation between hub stakeholders in Murmansk

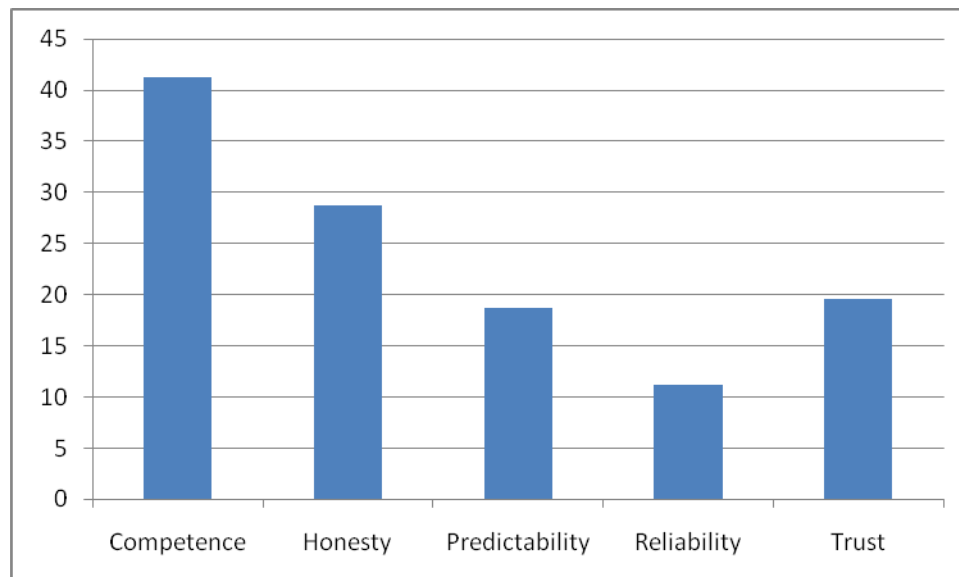
Now we will move on to the assessment of cooperation between actors in the region. Ports interact with their partners much more rarely than transport and consulting companies, which do it at least every month with an exception for governmental and research institutions. Alternatively, governmental and research institutions are the only counterparts with which ports interact more often than once a year.

The character of interactions between stakeholders differs from one respondent to another. Here formal communication yet personified through e-mail or fax as well as both formal and informal interactions (one-on-one and not) were mentioned. Thus the diversity of interaction modes in Murmansk is bigger than in Arkhangelsk and so are the possibilities for closer cooperation and information flows.

Now evaluation of importance of different components of trust and competence by respondents will be conducted. Competence is valued more than twice as much than aggregated trust. The most important element of trust which is expected from a counterpart in cooperation is honesty. And the

least important one is reliability: one of the respondents gave 0 points to this category. The average importance of each category is presented in Figure 21.

Figure 21: Average importance of trust, its elements, and competence in Murmansk



Now we will analyze another factor influencing cooperation, namely previous experience / satisfaction from cooperation. Mostly respondents achieved the best results from interacting with their clients. After that, unlike Arkhangelsk, come governmental institutions. Cooperation with transport and logistics service providers is also beneficial for respondents (but some of them answered “non-applicable” to these categories, because they belong to them).

6.2.3 Perception of Logistics Centre in Murmansk

The last part of analysis again reflects respondents’ opinions about logistics centre in their region. Here one respondent thinks his organization is not located in any logistics centre, half of respondents believe that they are located in some kind of hub, and the rest somewhat agrees with that. First we will look at answers of the respondent who does not think he belongs to a hub, because a set of questions for him after a “jump” was different. The respondent believes that creation of logistics centre in Murmansk would be useful for his organization. It could facilitate increase in export, innovation capacity of the region, employment as well as attract new firms and investments.

Those companies that believe that they are located in a hub think that the hub well enough provides such benefit as improvement of business environment. It to some extent attracts new firms and investments and seeks funds. However it is very weak in reducing production costs, increasing innovation and employment. Finally, the main bottlenecks of the hub highlighted by respondents are poor economic situation in the region and condition of infrastructure. One of the respondents has mentioned also insufficient financing and lack of governmental support. Meanwhile no one think the hub experiences problems with competence, management, cooperation, new ideas and external competition.

As it can be seen, the responses on questions about benefits and bottlenecks of the hub are contradictory. On one hand it is said that the hub facilitates business environment, but on the other hand the condition of infrastructure is a problem of the logistics centre. Similarly on one hand hub is good in attracting investments and funds, but on the other hand it lacks financing. However this does not mean that the answers are not valid.

6.3 Evaluation of cooperation between stakeholders in Arkhangelsk and Murmansk regions

Now we will summarize all findings and evaluate the cooperation level in Murmansk and Arkhangelsk regions.

6.3.1 Evaluation of cooperation in Arkhangelsk region

In order to describe the environment for creating a hub/cluster in Arkhangelsk region, Porter's diamond needs to be mentioned. Following this model, demand, competition and related industries conditions in the region are favoring clustering, while factor conditions require improvement. It refers mostly to physical condition of infrastructure as well as lack of governmental support, poor financing and ineffective management (according to respondents). However currently the infrastructure related investment as well as regulation reform are launched in Arkhangelsk, which is supposed to improve factor condition and stimulate cluster development.

Following the ideas of other clustering schools, clusters are supposed to be innovative and increasing their competitiveness through offering new solutions. However, it is obviously not the

case of the logistics centre organized around port and heavy industry in Arkhangelsk. Indeed, innovation is neither requested much from the demand side, nor enhanced by common projects with research institutions. It is also mentioned as neither benefit nor bottleneck of the logistics centre by the respondents.

With regard to the main focus of the study, cooperation evaluation, it can be said that the cooperation of participants with related industries, transport and logistics service providers is at a higher level than that with public bodies and research institutions. In general public authorities are perceived as a mean to improve the economic situation and infrastructure, but not as a partner in any sort of common activities. Thus governmental and research institutions are more “environment” than “counterpart”. However, if we focus on cooperation between actors and their partners, it should be mentioned that it is happening in formal form and generally not very frequent, which means lack of closeness in common actions. Besides, trust (and especially such its element as reliability) is valued less than competence. This means that in best case partners want each other to be honest, but they do not expect the ability to help and undertake extra actions when needed or to be perfectly predictable in their behavior. As mentioned before, actors prefer efficiency and they are used to mostly rely on themselves. Judging by the fact that respondents estimate results from cooperation with their clients as well as logistics and transport service providers as moderate, there is still room for improvement and not all goals are being reached. The same applies to cluster performance, which is currently not fully providing benefits as expected by stakeholders.

6.3.2 Evaluation of cooperation in Murmansk region

The Murmansk region has good demand and factor conditions for creating a cluster according to Porter’s diamond. This means that on one hand infrastructure of the region is on a satisfactory level (with positive trends in improvement), and on the other hand demand imposes high standards to be kept in order not to lose clients. However respondents do not face severe competition, which could mean not enough stimuli for increasing competitiveness. And finally speaking about supportive and related industries, respondents do not seem to be much involved in common projects and focus on innovation development. To sum up, the basic conditions for creating a hub are present in the region. However, further awareness development is required in order to improve environment for clustering.

The cooperation between stakeholders is rather fragmented. It can be seen that smaller and more specialized companies cooperate with clients, transport and logistics service providers, while bigger organizations (ports) tend to cooperate with public institutions. The quite high frequency of interactions is supported by different modes of communication, which generally can create common environment favoring cluster building. Thus it can be said that the cooperation between hub stakeholders in Murmansk is closer than that in Arkhangelsk. As for trust, the results obtained in the two regions are quite similar. Trust is valued less than the competence of the partner, while honesty is regarded as the most important element of trust. Previous experience of collaboration with partners is higher in Murmansk, which means that those groups of partners mentioned above (i.e. ports – governmental institutions and transport companies – their clients) work well together and are actually able to reach common goals. Overall it appears that organizations in Murmansk have positive experience as well as realistic expectations from clustering which would favor logistic centre creation.

Besides, most respondents believe that they are already in some sort of hub. One respondent which does not think so still would like to have a centre established. Meanwhile the opinion about cluster benefits and problems differ sufficiently which does not allow to say clearly whether the logistics centre in its present state fulfills its tasks or not. Anyways its further development seems reasonable and expected by respondents. However we should bear in mind that just like in the case of Arkhangelsk, only companies interested and aware about hub possibilities have decided to take part in the questionnaire, which could also be an explanation for some of the findings.

6.4 Recommendations for hubs based on survey outcomes

Since the level of ambition of this paper is not only diagnostic but also normative, the practical implications of our findings will be presented now. The recommendations for improving cooperation and enhancing clustering in Murmansk and Arkhangelsk based on our findings and with some inspiration from the theories are presented in the table below.

Table 2: Recommendations to logistics centres in Arkhangelsk and Murmansk

Recommendations	Arkhangelsk	Murmansk	Both
Cluster related	<ul style="list-style-type: none"> - Infrastructure improvement - Management improvement through PPP (public-private partnership) facilitator 	<ul style="list-style-type: none"> - Awareness rising actions (about benefits of clusters) - Competition stimulation - Stimulation of supporting / related industries 	<ul style="list-style-type: none"> - Improvement of business environment (legislative, financial) - Stressing the importance of innovation, quality issues and environmental considerations. The higher the standards, the bigger cluster need for development
Cooperation related	<ul style="list-style-type: none"> - Stimulating cooperation: common projects suggestions from public bodies - Seminars and conferences about the benefits provided by relationship management - Informing about best practices from similar hubs 	<ul style="list-style-type: none"> - Enhancing cooperation between public and private sectors - Enabling trust by imposing certain expectations (showing importance of reliability, predictability and honesty in common projects) 	<ul style="list-style-type: none"> - Informing participants about outcomes of this study - Conducting benchmarking as a development of the research with the follow-up presentation to stakeholders. The trust should be developed from bottom -up

To sum up, the rising of awareness is crucial for development of cooperation in the region. This can be done by combination of seminars and workshop, publishing of research findings and best practices and so on. However those soft measures are not enough in the present infant stage of cluster development: also the improvement of infrastructure, introducing of cluster facilitator and creation of good business environment is important.

7 Stakeholder analysis

7.1 Perception and expectations of Logistics Centre in Arkhangelsk

7.1.1 Overview of respondents: sectors of activities and transport strategies in Arkhangelsk

The following groups of both private and public organizations were taking part in the interviews expressing their opinions about the hub:

- Ports
- Shipping companies
- Forwarders
- Oil companies
- Public authorities
- Association of oil industry suppliers

Their spheres of activities are the following:

- Concession to produce oil
- Sand extraction, river shipping, passenger transportation
- Stevedoring
- Shipping of various goods such as forestry goods, paper, coal, metals for export, and steel, cement, fruits and vegetables for import
- Forwarding, chartering
- Agency and customs service provision, technical supplies, and insurance
- Control and support for the transport, communication and industries in the region
- Information support, development, and supply for oil and gas industry

The shipping, forwarding, and chartering companies, which took part in the interviews, have named some of their clients and described the competition in the region, thus we will focus on them a little more. Main clients of one of our respondents are Polar Light Company, Lukoil, as well as companies requiring regular supplies for Prirazlomnoye oil platform construction, which reflects a big interest for the development of the Northern natural resources.

In general, our interviewees tracked the market need for a single company able to arrange all transport, logistic and supportive services from door to door. Thus they try to offer comprehensive

range of services. Some of them tend to focus on big projects now, like pipe and engines shipment, supplies for deep-water area in the port (providing fuel and customs services), shipment for machinery construction and ship-building sectors.

In Arkhangelsk there are not many companies of this profile, but the competition is very tough. As one of the respondents underlined, in Saint-Petersburg there are more players, but competition there is less tough. The main competitors in Arkhangelsk are Belomortrans, Belfrakht, Mortek, Northern Shipping Company. And they are competing for the same cargo – basically for all types of goods – and constantly looking for cargo owners. Also they try to overtake some cargo from Saint Petersburg. Among their competitive advantages in Arkhangelsk were named good fees and timing. Also Sevmash and shipbuilding plants offer their supportive services increasing competitiveness of Arkhangelsk hub.

In 2008 there was a serious drop in the cargo flow, and now hub members are trying to reach the previous volumes. The decline was in all categories of goods. Speaking about the markets served, some of the respondents work only internally, without any international activities, while others ship to and from abroad. Concerning the shippers' fleet, it is normally not container based. However there is a container park for Hamburg, Rotterdam, and Antwerp from where chemicals, dry milk, and butter come, and to where cellulose, paper, and cardboard go.

Speaking about Arkhangelsk port, it is the only port which has a licence for trans-shipment of all types of goods, including the dangerous ones. Thus the port is universal. Taking into account its geographical location, a big share of cargo comes from the forestry and paper plants. Here there are two cellulose and paper mills, Arkhangelsk and Solombala CBK. Also a big share of the turnover comes from Norilsk Nickel – up to 25%. Important directions today are Arctic fields. Import nowadays includes products of metallurgic industry. Arkhangelsk port has 7 years of experience of trans-shipping pipes for all directions, including submarine projects on the Kara Sea and procurement of the extraction project on Yamal. The export of coal up to 0.5 mln tons is arranged to most European countries: Great Britain, Germany, France etc. During the present crisis part of the cargo flows has been totally closed. Other parts have remained unchanged. The overall loss was around 15-20%, which is not catastrophic. By the year 2011 there is an optimal forecast of reaching pre-crisis results.

Concerning transport strategies of users of the transport hub, the following ways and perspectives of using transport and logistics services were obtained.

One organization transports some equipment, materials, and spares necessary for its activities to Arkhangelsk directly. However, Saint Petersburg is still mostly used. Goods and containers coming from US and Finland pass customs in one of those ports. Sometimes Murmansk is used too, but it takes longer time on customs there. However, speaking about the proportion, less than half of the cargo comes to the company in question directly via Arkhangelsk. When goods are coming from Saint Petersburg, trucks and trains are used to carry them to Arkhangelsk. Time and costs for this transportation are reasonable. Respondent's outgoing logistics mainly include airplanes, trains and helicopters to the fields in Siberia, which are impossible to reach by sea or roads because of their inland location.

7.1.2 Concept of Logistics Center / Hub, its presence and development stage in Arkhangelsk

In general in Arkhangelsk the concept of hub is understood as an **integration of all transport systems in the definite place and time**. Transport systems in this case mean settled **modes of transportation, logistics companies, supporting services, and controlling organs**.

Some of the respondents delimited a hub solely by infrastructure of ports and railways, where space and techniques in port and logistics based on shipping play the major role. Others elaborated more on logistics centres seeing a hub as a centre of cargo flow distribution, where all services necessary for uniting logistics systems are performed.

A hub includes then several enterprises of the transport complex, where the main organizations are ports, railways, automobile companies. Together they form the main activities of the hub. A very important issue here is how well harmonized their activities are, and how the members interact with each other. Especially the question of **coordination and harmonization** refers to railways. Harmonization is a question of accurate interaction of two organizations. The work is harmonized when there are no down times, there are clear schedules, and those schedules are strictly followed by all involved sides.

All of this is done so that the cargo moves. Cargo should not be stored at one place long – this is the main rule of logistics: the greater the speed the cheaper the service. And, as one of the ports said, the final result is that it is more comfortable for the client which actually evaluates the service.

One of the interviewees mentioned the regional Association of Transport Organizations as an important body for hub members' activities coordination. Moreover it was said that a hub with developed transport and logistics infrastructure should include the following specific elements:

- terminals of sea and river ports, airport;
- rail, road and air connections;
- warehouses and customs control zone;
- control services (border-crossing, veterinary, sanitary and other kinds of control);
- safety services in ports, terminals etc;
- container terminal;
- Chamber of Commerce and Industry;
- towing companies, ship-chandlers, expeditors, customs brokers, agents.

The question of presence of the hub, or rather its **stage of development**, was one of the most controversial ones. Indeed, some of the respondents said that it exists, but perhaps, on the early development stage where still much has to be done. Someone claimed that the hub is not of the wished quality, marking limited depth of port not allowing all big ships to enter, seasonal road problem, and freezing port as main limitations of the hub.

However, there was also an opposite perception underlying that the hub possesses all necessary infrastructure: railways with competitive fees, little congestion and wagons in satisfactory condition; port ideally adjusted for imports of i.e. steel and pipes; customs, airport, and roads on place. The only task for increasing hub attractiveness is in this case to attract more imports, especially for Shtokman.

Yet another opinion is that all necessary for hub functioning automobile, railway, air, sea, and river transport are present in Arkhangelsk. Association of Transport Organizations is also there for coordination purposes. However it is difficult to develop the hub when various players do not find common focus. The regional economy as a whole depends on the effectiveness of hub. Thus there should be a common goal – improvement in transport.

A problem for the hub is that the cargo flow of Arkhangelsk port is not rising. The common perception is that Arkhangelsk port is considered in general. However on its territory there are Arkhangelsk Sea Commercial Port docks as well as other separate docks belonging to various forestry enterprises. And they naturally have separate turnover. Under this consideration the cargo turnover of the Sea Commercial Port of Arkhangelsk is not so big.

A difficult issue for the port is the presence of ice dues, which are making the port one of the most expensive in the world. For this reason charterers switch to other modes: luckily railways work well in the region, but sea transport suffers from that. Even the regional Ministry of Transport cannot solve it.

There were also expressed optimistic views seeing Arkhangelsk as a prospective hub related to the program of natural resources development in the North. For example such air transportation organizations as the Second Aviation Detachment (dynamic small company able to reach Arctic islands and Novaya Zemlya) have good chances for Northern destinations working on their helicopters and planes. Also the route around Scandinavia, Europe, and Baltic Sea sailed by ships with river-sea class is considered as a good opportunity for the hub.

Such projects as construction of the deep zone of the Northern part of the port of Arkhangelsk and Belkomur rail project are supposed to ease entering the port and thus make it more attractive. The deep zone of the port will be able to received ships up to 70,000 and later 100,000 tons which would result in 30 million tons of yearly cargo for the port. When Northern deep zone will be done, the sea way to the port will be reduced from 50 to 13 kilometers. Previously, those 50 kilometers had to be maintained, which resulted in higher port dues. Thus, deepening of the port will bring both cost reduction and cargo flow increase. As for the Belkomur Railway, it would in perspective connect Arkhangelsk with the Urals, Kazakhstan, Siberia and Asia. Those projects are present in the Strategy for socio-economic development of the Arkhangelsk region and Russia.

7.1.3 Functioning and coordination of the Arkhangelsk hub

As most of respondents claim, the main partners in Arkhangelsk hub are the Sea Commercial Port of Arkhangelsk and Arkhangelsk Division of the Northern Railways. Automobile transportation is also a key element for the hub, but given the workload and coordination mechanisms, only

mentioned above two key players are the most important. The common understanding is that railway and sea transport should work well together in order for the hub to function well.

Most respondents think that railway's and port's activities are well coordinated. However cooperation depends on the capacity of railways. The Port of Arkhangelsk can handle 12 million tons of cargo a year, but in fact it does not handle more than 5 million, which makes a big reserve for improvement.

The interaction between actors is based on long-term contracts. It can be improved with the help of clear function definitions between the different entities present in the hub. Port should trans-ship, shipping company – transport, forwarder – expedite.

There are two main documents which regulate the interaction between ports and railways: “Hub Agreement” (regulates order of interactions) and “Unified Technological Process” (execution mechanism). They are both very important, because they manage the relations between the main hub actors.

It was underlined that ports and railways are subjects of natural monopolies. Tariffs for their services are fixed by the state (more precisely, by Federal Tariff Service). Depending on tariff pressure at logistics chains, the state can make discounts in order to stimulate the cargo flow in the given port. I.e. in order to increase coal shipping through the port of Arkhangelsk, the government has done the following: the railway tariffs for coal were decreased and the discount for port tariffs was given by Rosmorport. This was a real help, because it allowed attracting up to 0.5 million tons of coal for export.

The private companies' opinion although was that state does not give enough support for tax reduction. And then shipping companies pay all of it. It was claimed that this question remains critical since early 2000s.

The function of government is thus regulation of transportation and trans-shipment tariffs in order to stimulate vessels entering the port. Also in order to support the all-year-round navigation ice-breaking dues are subject to governmental regulation.

The Regional Ministry of Industry, Transport and Communication is also interested in companies' activities. It helps to regulate the transport related processes. Sometimes they have possibility for financing, especially within big federal programs. The interviewees would like federal government to pay more attention to the further development of the hub, while regional government already supports it.

The following opinions were given about cooperation among the hub partners. Some of them have a 20 years long experience in working together and quite strong relations. Most respondents are satisfied with collaboration, underlining that there were no problems which would provoke to change a contractor. In general the relations are strictly contractually regulated which helps to ensure performance.

Respondents are also part of such associations as “Sozvezdye” (organization of the suppliers of the oil and gas industry), Association of Transport Organizations of the Arkhangelsk region, and Association of Ports of the Russian Federation. Those associations try to lobby their interests and bring different market players together.

Speaking about knowledge and expertise support, the Northern Arctic University is the institution providing human resources and a research base for the Northern region of Russia. Besides, ports of Murmansk and Arkhangelsk also collaborate with each other on Information exchange, ship repairing (where Arkhangelsk helps Murmansk), and ice breaking (where Murmansk helps Arkhangelsk). The ports are also complementary; their experience with bulk and general goods supplement each other. Arkhangelsk respondents find this role division very healthy and useful.

7.1.4 Competitive position of the Arkhangelsk hub

When asked about competitiveness of the Arkhangelsk port, respondents tended to evaluate it against Murmansk and Saint-Petersburg. And here again the opinions were quite different.

Some said that customs is the major problem. Saint-Petersburg port is quicker in that than both Murmansk and Arkhangelsk ports. It still takes acceptable time to pass the customs in Arkhangelsk when there is little cargo flow. However when the cargo flow will increase, it will be very hard for customs to work, at least the first period after the increase.

Others claimed that Arkhangelsk port is not competitive because of the ice situation and very high tariffs. Murmansk port is ice-free and it is also deeper. While Arkhangelsk can receive ships with maximum 25,000 tons of deadweight, Murmansk can receive ships with over 100,000 tons. As a result, fees per ton are much higher in Arkhangelsk. Also the water supply for the ships is a problem in Arkhangelsk: it costs there 12 USD against 3-4 USD in Europe. Pure water can be taken only near one dock.

To sum up, the major respondents' concerns about competitiveness and attractiveness of the Arkhangelsk port and thus hub as a whole are the following:

- high port duties;
- unpredictable customs processes;
- objective limitations like depth;
- ice conditions during winter navigation;
- geographical location.

The other opinion suggested that Arkhangelsk hub is more competitive than the Murmansk one. This was claimed due to the following reasons:

- Murmansk port is overloaded, the infrastructure there is occupied;
- Murmansk region has problems with railways;
- Road transportation to Murmansk is not profitable because of longer distances;
- In Arkhangelsk there is also a shorter railway distance to main centres of cargo flow initiation compared to Murmansk;
- There is a military base in Murmansk, which can close a bay for 2 days.

Yet the other group of interviewees believes that we should rather speak about hubs' specialization and complementarity than competition. None of the ports will be able to handle all of the cargo volumes alone. Both Murmansk and Arkhangelsk are needed and widely used due to their uniqueness. Thus instead of competing, the two ports should aim for the same goals, but each of them in its own specialized segment. None of the ports should aim to lead. The answer lies in coordination of the efforts for reaching common goals.

In general both ports would like to be a supply basis for shelf projects. They both have advantages and disadvantages. Their task is to give objective information for shippers, so that they choose the port which is more suitable for them.

It was mentioned that Murmansk port was created and mostly used for bulk, especially coal. Saint Petersburg is a traditional port for containerized goods. And Arkhangelsk hub needs to become a little more known in order to fulfill its potential. In Arkhangelsk there is a Bakaritsa terminal, cement plant in Ekonomia port area will be launched soon. Infrastructure fully allows trans-shipment, storing, processing.

Saint Petersburg is over congested. Initially there were three major ports in North-West Russia, but Saint Petersburg started to lead. Now it is a “prisoner of its own popularity”. When the goods need careful handling it is easier to arrange it in Arkhangelsk. In Saint Petersburg now there is no space and time for that. A ship is an expensive machine, which requires a careful treatment. Arkhangelsk port capacity allows work without delay and lately those nuances have become important, resulting in many clients preferring Arkhangelsk. They are satisfied with the service in Arkhangelsk, and local companies learn to work with different types of cargo providing careful and fast handling.

Speaking about Norwegian ports, it was hard for the respondents to compare them with Arkhangelsk. They believe that legislation changes are introduced all the time, but not so much that goods could travel freely across the border.

After having discussed the present competitiveness of the hub, respondents were asked about the developments which were recently done and required in order to support hub’s position. Some of the respondents saw no major changes lately. Others were even more dramatic saying that Arkhangelsk is a transport dead end. If not for the wood and nickel, there would be no transit flows there. There was said not to be any open end railway. Railway goes only through Moscow, Vologda, Kotlas. Thus currently it is not profitable to carry goods from the Ural region to Arkhangelsk.

It was mentioned that the current crisis influenced the hub a lot. However in oil shipping there is a big progress especially in Nenetsky Autonomous Okrug performed by Sovkomflot and Kalimningradmorneft.

Speaking about positive development, interviewees mentioned the progress on the deep port zone project. Start of works for this project is fixed for 2012 supported by public-private partnership. It is planned to attract finances not only from the budget, but also from the private organizations, when the works start.

The required developments, discussed during the interviews, concerned improvement in regulation, customs, and airlines which are especially important for huge oil projects in the Barents Sea.

It was mentioned that plans are always very serious, both short- and long-term plans. But there are many problems, which influence their accomplishment: crisis, financing etc. However the main transport problem is the capacity. And here the well developed infrastructure plays the major role. The aim is also to reach a good level of technical and technological equipment, which would be sufficient for cargo flow and organization structure for coordination.

Such projects as Belkomur and the construction of a deep-water port in Arkhangelsk give new impulses to hub development. Both of them are rather long-term plans. In relation to the deep-water port, the managing company has been created (there is coordination with government structures). Now the pre-project preparation is conducted in relation to this port area.

A big need for state support was expressed by private transport companies in order to make port fees more equal. At present they are 5 times higher than in some other ports. However it is difficult to accomplish it. Ideally, according to one interviewee, they could be accumulated somewhere and then shared more equally among ports. Besides, the regional Ministry of Transport is expected to support the hub by raising awareness about it abroad. Then it would be perceived as an alternative to Saint-Petersburg and Murmansk.

7.1.5 Factors defining the potential of the Arkhangelsk Hub

7.1.5.1 General Hub Development Factors

Concerning the hub potential the following factors were named as sources of active development.

First, some respondents looked back saying that Arkhangelsk was the first Russian sea commercial port supporting international trade relations. It has always been the traditional port for shipping forestry products, High North and NSR supplies, transshipment of goods for oil and gas and

metallurgy industries, machinery construction and ship building. Some respondents await the improvement in world forestry trade conjuncture which could stimulate hub development. Besides, NSR is supposed to bring a lot of development.

Second, it was underlined that port actively uses its possibilities. New spaces are being built, and the port quickly reacts on new requirements from the demand side. In this perspective Arctic shelf development seems promising even though Shtokman was delayed. Preparation for development of Prirazlomnoye field went not so smooth, but is currently on its last stage, which makes it the most realistic project for both Arkhangelsk and Murmansk regions. As for Shtokman, this project is now on its preparation stage, final investment decision will be made in March 2011.

Third, hub stakeholders themselves are very perspective. For example, Norilsk Nickel was named as one of the main stakeholders of the hub, and it develops its own shipping company. Besides, In Ekonomia port area the plant specialized to concrete pipes almost started. After having positioned Arkhangelsk as an intermodal transit port, the hub would be on a good prospective track connecting North-West of Russia, Moscow and neighboring countries with Middle Ural, close to Urals regions etc. Also the port is multi-functional, able to handle supplies for oil and gas fields, general cargo and small lots.

Forth, the project of industrial parks is starting in the Arkhangelsk region. Industrial parks are zones with ready infrastructure aimed for locating companies from the priority industries there. These industrial parks will increase the flows of equipment, raw materials etc. to the North and South of the Arkhangelsk region. This will naturally result in bigger demand for hub services and increases in port turnover.

Also the sharing of waters with Norway is good for the development. Previously, those territories could not be used at all, and now more activities in the region are expected. Finally, the channel between the White and Baltic Seas is currently functioning, and even though it is not in great condition, good perspectives are related with it. It can be used for pipes, equipment and other small lot goods from central Russia. They come to Arkhangelsk by river, and are then transshipped to sea.

However there is also other opinion, which expresses the doubt in hub development in the following years. The arguments for this opinion are the following: Shtokman is delayed; most

activities are carried in Western Siberia; and in general there was no significant growth in economy predicted for next 3 years. Almost all respondents named cargo flows as the main determinant for hub development. However, lately the general cargo volumes are stable. Some cargos go up, some go down. Forestry goods are decreasing now, construction materials go up. It seems to some interviewees thus that the attractiveness of the region does not grow; SMEs and industry are not developing.

7.1.5.2 Northern Sea Route as a Hub development factor

Special attention was given to the Northern Sea Route as a factor defining potential of the Arkhangelsk Hub. All respondent were mentioning it on different stages of interviews. Hereafter the summary of their expectations, concerns, and general opinions on this topic is presented.

The Northern Sea Route is considered to be a closer, faster, and safer way to China, Japan and the West Coast of North America. There is no piracy, which is a big concern for many shippers. Besides, Trans-Siberian road is developing, which could be a good complement for the Route. Also there are plans for port construction on Yamal. Those ports could give additional support for the NSR.

Thus many Arkhangelsk hub stakeholders hope that Russian and foreign shippers would realize how much shorter and cheaper it is. The approximation of 4000 miles of distance savings was given for the destination Netherlands - Japan using the Northern Sea Route compared to the Southern way through the Suez Channel.

Moreover, global warming and development of the Northern territories of the Russian Federation, as well as improved political and economic climate in Russia were named as factors stimulating the attractiveness of the Route. Reflagging procedure and organization of ice-breaking support can be organized by forwarders and shippers located in the region, and thus were not considered as a big barrier for using the Route.

The Northern Sea Route perspectives are not only assumed by the market players, but are also clearly defined by the State. They are related to development of the oil and gas fields mainly on the shelf of Yamal, in Prirazlimnoye, and Shtokman. Thus the development of the Arkhangelsk Hub is correlated with the development of the oil and gas industry. The port of Arkhangelsk is one of the main actors for the supply and support of the fields where the oil and gas extraction is planned. The

plans include creation of the procurement base for Gazprom there. Those project would require the extensive use of the Route.

Speaking about present example of sailing on the Route, Norilsk Nickel transports on constant basis cargos to Dudinka: goods for town support on direction to the field, and products of the field operation on the way back. They have 5 own vessels, all of which have the highest ice class. Thus port tends to support the route Arkhangelsk – Dudinka – Murmansk. The cooperation with Norilsk Nickel is on-going since its very establishment in the region. And Arkhangelsk has always been an important hub for them.

In general the Northern Sea Route is a shorter and thus cheaper way for summer navigation. However respondents believe that it should be widely promoted by the State. The common opinion is that shipper's choice of the way depends on total costs and especially ice-related ones. The long time might be needed in order to convince the users in benefits of this way. When new plants and towns will be built there, big producers will use the Northern Sea Route more. Meanwhile it might take up to 20-30 years for this common Route use to begin.

To commercialize the Northern Sea Route there is a huge need for infrastructure, meaning creation of supply bases for water, fuel, food, repairing bases, communications, and airports on the way for supporting services. Without this support further Route development seems complicated, if not impossible. Besides, all regions around the Northern Sea Route should raise safety, especially navigation safety, to drop risks.

The important issue is that the Route is included in national and regional development strategies. It is connected to Belkomur and deep port projects. China –Norway trial coal transportation was mentioned as a very good Route use example.

As for the Route's influence for the Arkhangelsk Hub development, it was underlined that the Northern Sea Route is especially suitable for goods with high costs - general and containerized goods – which are initially supposed to be exactly goods of the Arkhangelsk port. Moreover, In Arkhangelsk there is a hydrographic fleet for Northern Arctic, which allows checking depths, and aviation fleet for ice situation exploration.

7.1.5.3 Container potential as a Hub development factor

According to hub stakeholders there is a big potential for container shipping, but this potential is underestimated in Arkhangelsk. In general, the port is expensive. Costs in Arkhangelsk are much higher than in neighboring ports. Belomortrans has tried to make a special line for containers, but it ended up with no good results. In general, export and import of container goods have seriously suffered during crisis (also in Saint-Petersburg). Insufficient volumes thus do not allow container flow development.

If the Northern Sea Route is developed, other perspectives will arise, special vessels for containers will be used. However, a lot depends on government regulation. Dues for private companies play major role.

Containers are perceived as the most comfortable mode of transporting collective goods. There is one line from Arkhangelsk to Europe in operation right now. Railways also have a container terminal which would allow intermodal solutions. Shippers and forwarders try to increase container cargo flow, but they say 1-2 years ago the situation was better. When asked about container shipping examples, they mentioned chemicals for North Russia. However, there are all services and capacity for all kinds of goods from techniques to dangerous reagents, including radioactive materials.

There was expressed a hope that container situation will improve when Shtokman is in operation. Now a big share of Arkhangelsk port capacity is underused, that is why the port currently has to take cheap bulk cargo like coal etc., even though it was initially meant to be for expensive specialized goods. The problem is that cargo flows are fixed, so Arkhangelsk is not a traditional track for containers. Thus communicating of the hub benefits to freight owners is needed in order to raise container perspectives, which actually form a basis for a classical Logistic Centre.

To sum up, attracting containerized cargo is one of the goals of the stakeholders of Arkhangelsk hub. But for this they need cargo owners. As for the infrastructure, it is on place. For example, Norilsk Nickel uses Arkhangelsk container terminal and is the main container shipper in the region. Port zone Ekonomia is specially designed for containers; it is the Northern-most container terminal in Russia.

7.1.6 Respondents' attitudes and resources in relation to the Arkhangelsk Hub development

The following advantages could be obtained by the hub members:

- Customs procedure improvement
- More flights and connections (currently there are very few flights to Norway, Finland, etc.)
- Rise in the volumes of cargo, more attractive freight fees, import increase, extra ice-breaking fleet

In general the expectation is that transport and logistics operators will obtain increased cargo flow. As for transport service users, they would get increase in service quality level and decrease of timing. The respondents' concerns mainly refer to the fact that development of the hub is going slower than expected and there is a lack of info about Arkhangelsk hub and the services available.

The general attitudes about hub perspectives range from skeptical to very optimistic. Even though some interviewees were indifferent and only expressed explicit need for ease of customs procedures and number of airlines, most were supportive and hoping.

Concerning resources which hub stakeholders can invest in its development, there is also a clear division between different groups of stakeholders: ports and railways are supporting hub by conducting their own modernization and capacity improvement projects; ministries and association support hub via lobbying its stakeholders interests on higher level and attracting attention to hub perspectives; transport and logistics service providers offer high quality services for attracting clients. Visually the groups of stakeholders, their interests and resources are presented in the Table below.

Table 3: Stakeholders' interests and resources

Stakeholder	Hub user	Transport and logistics service providers	Authorities
Interests	Increase in service quality level, decrease in timing	Increased cargo flow	Regional development
Resources	Demand for local services	Modernization and capacity improvement projects, high quality services offer	Lobbying hub interests, attracting attention to hub perspectives

7.1.7 Respondents' opinion about the most interested and influential stakeholders of the Arkhangelsk Hub

There was no common opinion about who would actually benefit from and influence hub development the most.

Approximately half of the interviewees say that it is the region, which the gets the most out of the logistics centre and needs more projects and services going on in order to increase employment, taxes and the standard of life. By increase in shipping in the area, infrastructure will be supported too. Developing transport infrastructure, the related industries will develop themselves following a “snow ball” effect. No advantages for separate players are expected at this stage. Later it will be clearer whose interest will be most supported.

Some say that Sea Commercial Port and Northern Railway are main project beneficiaries, since they get their modernization project partly subsidized. Also the shipping companies were named as the most interested stakeholders given the rising demand for their services within developed hub.

Siberian metallurgic plants which will be connected to the European part of Russia through Belkomur project represent another interested group. Indeed, having a direct connection Siberia-Arkhangelsk they will have a cheaper transportation for their main production, raw materials, as well as needed supplies.

Actually, it's not the single organization and not even the public body, but rather the whole North-West Russia involved – claim authorities. For example, in Belkomur project Murmansk, Arkhangelsk, Vologda regions, and Komi Republic are involved. The main benefit will be the improvement of relationships between the regions. It will also lead to new work places, and improvement of quality of life.

Talking about the most influential stakeholders, regional government as well as oil companies operating on the shelf was named in this category. The common opinion suggests that the single player cannot change the situation. National and regional governments should be involved. But for now stakeholders cannot see any clear steps from their side.

Other influential players are Rosneft (having its terminal in the port) and Norilsk Nickel which could invest in PPP (public-private partnership) projects; Association of Transport Organization of Arkhangelsk region, association Sozvezdie.

General overview of the Arkhangelsk hub main stakeholders is presented in the Figure 22.

Figure 22: Arkhangelsk Hub main stakeholders



7.2 Perception and expectations of Logistics Centre in Murmansk

7.2.1 Overview of respondents: sectors of activities and transport strategies in Murmansk

The following groups of organizations were taking part in the interviews in Murmansk expressing their opinions about the hub:

- Stevedoring companies
- Shipping companies
- Transport branch of big industrial enterprise
- Public authorities
- Association of oil and gas industry suppliers
- Transport consulting company

All of those companies have their own opinion and role in the hub creation. They perform various activities aimed at organizational and regional development. Hereafter some of those projects and transport related strategies undertaken by our respondents are presented.

Stevedoring companies on the territory of the Murmansk Port are currently involved into serious modernization, where one of the aims is improvement of the ecological situation in the region. Besides, territory enlargement by taking space from the sea is planned. Moving coal handling facilities further from the city centre, and thus territory release from coal will provide more space for cleaner goods. This underlines again that solving ecological questions is one of the main tasks for modernization. Half of the investments for this project are provided by the state. However the big potential from the coal side is foreseen too: Murmansk stevedoring companies expect to become more active when more energy will be needed in EU.

Association of the oil and gas industry suppliers provides informational, educative and contact-building support for its members. It also includes the biggest regional and international transport companies offering their services for the companies operating at Russian shelf near Murmansk. Some of the association participants arranged Murmanshelf Logistics Consortium – the separate association focusing mainly on transport, while Murmanshelf itself has wider spheres of activities and responsibilities.

Transport and logistics are very important spheres of activity for **big industrial companies** operation in the region. For example, Norilsk Nickel has had its transport branch in Murmansk for 5 years already. Today almost all sea shipping of the company is done through it. Norilsk Nickel uses its own fleet in Murmansk, develops its own terminals and forms a railways division with its own wagon park. All of this is arranged mainly for internal purposes where goods and materials are circulating between the Norilsk Nickel concern members. Sometimes company's transport facilities are used also for commercial goods – though not entirely externally – aimed at supplying Dudinka inhabitants etc. Possessing all means of transport for own purposes will bring independence for the company, which believes that the North will develop and wants to sail along the Northern Sea Route. The company sees a big potential in this field and its ships with the highest ice-class are supposed to be used exactly for that. However the company stays aside from the Murmansk Transport Hub project, aiming at independence and self-support.

Speaking about the **public authorities**, the Ministry of Transport and Communications of the Murmansk Region helps the hub related activities through development support, projects preparation and approval support.

As for the transport and logistics **consulting company**, which took part in our research, it provided its external opinion about hub development and relevant on-going projects, because this organization was not a direct logistics centre stakeholder, but rather represented supporting environment for the hub.

Murmansk Shipping Company (MSCO) explained its current situation in the post-crisis period. Its turnover did not drop much, only for some categories: coal shipping has fallen mostly because of the accidents and consequent decrease in exports. The current crisis has seriously affected prices, however now the fertilizers have started to grow again: the prices for them can cover costs of production and shipping, too. The Murmansk Shipping Company is also preparing for the grain shipping where the export from Canada to Europe is rising. As for the change in the company's client base, Norilsk Nickel is no more using its services. However, now MSCO ships for a metallurgic plant from Saint-Petersburg which replaces lost orders from Norilsk Nickel.

One of our respondents elaborated on the **general situation with shipping** in the region. Lately there has been an increasing competition from the side of the Chinese shippers. They might ship for half price of others, which would eliminate all other competitors in Murmansk. The reason behind them doing so, might be a wish to fill up spare capacity of their large ships. Then Russian, Norwegian, and other shipping companies can experience severe problems with maintaining their competitive positions. Indirect competitors of Russian shippers are Polish, Bulgarian, Finnish and German companies. But they are historical European competitors and "friends" at the same time.

Previously the Baltic and Barents Seas and North Atlantic were niches, and Chinese shippers were only present in China where the market and dynamics were good. However, now they are very serious competitors.

7.2.2 Concept of Logistics Center / Hub, its presence and development stage in Murmansk

In Murmansk a Logistics Centre or a Hub is perceived as a **centre connecting sea, railway, and road transport**. Connecting transport modes is supposed to be supported by **good infrastructure**. As for the softer component of the hub, a logistics system should be present. Logistics activities must be **synchronized, attractive for users, and assuring good timing**. A well functioning port was named as the most important part of the hub, but all other transport modes should also be available.

Concerning the presence and stage of development of the Logistics Centre in Murmansk, the following opinions were provided by respondents.

Figure 23: Continuum of opinion concerning the Murmansk Hub development stage



One of the respondents believes that the Murmansk hub as such is mainly brand and declaration. It surely has a geographical potential, but not much has been done to make it a real Logistics Centre. There has been many territory sharing problems, including establishment of new port boundaries. Also the energy problem imposes a need for an extra energy station construction. In general, the biggest question is the quality of infrastructure which is coming from the USSR times. Few examples show that old coal processing methods are still used; railway works on its edge. However there is a plan for hub development on the basis of PPP (Public-Private Partnership), which conditions are set up in Moscow.

The opposite opinion suggests that Murmansk is the biggest hub in the Arctic region, which includes a sea port, a railway station, air transport, and good roads. As an example, roads connecting Murmansk to Norway have almost been reconstructed.

However, according to the opinion of most stakeholders the hub should be reconstructed, which has resulted in the state program “Reconstruction of Murmansk Transport Hub”. For this purpose the managing company was created, and the whole process is controlled by the Ministry of Transport. There is a plan from the Russian Government developed in 2008, which determines the scope of work to be done in the hub, including new terminals, a new railway branch, the railway station reconstruction, a united Logistics Centre, the airport reconstruction etc. Murmansk hub thus plays an important role for big infrastructure projects in the region.

Yet another interviewee sees a big potential for the hub in transporting export/import transit goods using the Northern Sea Route and the Trans-Siberian Way. The main idea here is that the logistics centre’s cargo should be mostly transported by containers. Also the potential for the Murmansk Hub can appear from overtaking some cargo flow from Saint-Petersburg. The aim when developing the hub is to collect cargo owners for the West bank development, because on the East bank there is already no space. The hope is that after the crisis the overall economic rise up will also stimulate more active hub development.

Concerning the tasks performed (or supposed to be performed) by the Murmansk Hub, respondents mentioned coordination of transport organizations, which are located in Murmansk: railways, city administration, Rosmorport, Murmansk Sea Commercial Port; coordination of all transport flows; development of infrastructure and business environment; and attraction of private and public funds.

Currently the first stage of the hub projecting is over. Now the coordination of technical tasks for the second stage is on-going. Of course the crisis has slowed down the hub development: cargo flow has decreased, port performance got worse. The main drawbacks which happened were due to the market situation.

7.2.3 Functioning and coordination of the Murmansk hub

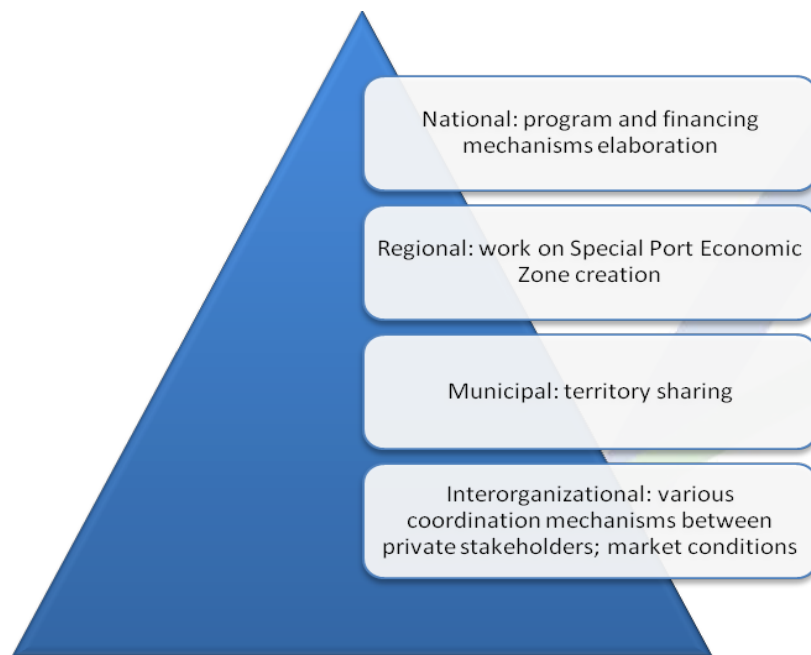
A common opinion suggests that the hub management is built upon contracts between ports, railways, and other actors. Results of those relations should be predictable for all parties, including clients. Also timing is very important. In order to make a hub more attractive for international operations, the customs work should be more predictable. Currently custom services impose high risks. Thus, legislative relations should be very clear and where possible, simplified.

There is no unified, clear system for hub actors' coordination. Someone has warehouses, someone – docks etc. Various schemes are in operation. It is so due to the fact that the hub works on market conditions, where different interests and strategies of various stakeholders meet. Thus, many respondents think that the strict synchronization is not needed. However, there are associations which help to explore market, communicate new information, help with logistics services etc.

Speaking about the role of the state, it controls the process indirectly. For instance, on the national level the overall hub program and financing line was created; municipal influence is exercised on the territory sharing issues; regional level authorities work on the special port economic zone project, which would create a free customs regime and give discounts on taxes. As a result it is supposed to raise the cargo flow.

The levels of decision-making related to the hub are presented in the figure below.

Figure 24: Levels of decision-making related to the hub



To sum up, there is no single control and coordination centre in the hub, the respondents suggest. This is a hub of different companies with different owners. Coordination is needed only on the construction stage. After that a hub will work independently. There should be just general

supportive rules and norms coming from Ministry of Transportation, Federal Agencies for transport, and regional government.

The last remark in this section will concern more informal communication and information flows between hub stakeholders. It was said that the cargo will find its way itself, because everybody can find the information nowadays. There are programs which unite people and organizations, forums and exhibitions, including very popular ones in Saint-Petersburg where transporters are meeting. Ports, terminals, freight issues are discussed there. In Murmansk there are around 10 big organizations within the sea transport business. All the actors meet for example on the professional days. Otherwise they can simply call to each other and get all the necessary information.

7.2.4 Competitive position of the Murmansk hub

Compared to Arkhangelsk, respondents perceive Murmansk as more competitive due to the lack of ice taxes and bigger depth. But they admit that in Arkhangelsk there are better terminals and more free space. The Murmansk Commercial Sea Port takes only classical goods; the Sea Fish Port is too old; so there is no space to accommodate new types of cargo. Murmansk needs to follow the development plans so that the situation changes. Besides, Arkhangelsk is more comfortable and user friendly, even though it is more expensive.

It was mentioned that in Murmansk there is the toughest control in Russia, leading to a lot of formalities which increase processing time. Saint-Petersburg is much better in this perspective: everybody realizes there that maintained cargo flow is important for the region, city, port, etc. Thus, special effort is done in order to increase hub's attractiveness. So that Murmansk becomes a real hub too, all the forces have to be focused in one direction.

If to look at Murmansk competitive position in relation to Norwegian ports, customs problems remain here. Obviously in Norway it is easier and faster to ship, physical delivery to Russia is also not a problem, but in the end total costs can be bigger if to ship goods to Norwegian ports and then transport them by roads or rail than to enter Murmansk directly. Thus they are not perceived as direct competitors to Murmansk.

Another opinion suggests that the Murmansk Hub can be compared to the standards of big European ports, but the need for a container terminal remains a serious challenge. It was said that

Murmansk does not compete with other Russian ports, but rather with foreign ones. If looking at the turnover of ports of Kirkenes or Botnic bay, one will see that Murmansk is competitive in the matter of port duties, geographic conditions, climatic features.

Among the Murmansk's competitive advantages geographical and political factors were named. The region has a direct exit to the World Ocean and is currently supported by the government. Arkhangelsk is closer to the Central part of Russia, but it is frozen almost half a year. This implies higher costs. Regarding the depth, Murmansk has no competitors in this question. In many points Murmansk could be even preferred to Saint-Petersburg which is freezing, congested, and is a Baltic port with less depth. One interviewee mentioned that there are no other official hubs in the Russian Barents region.

Overall, there is certain equilibrium in North West Russia; every port works on its volumes and types of goods. Murmansk works with coal, apatite, iron concentrate, import for non-ferrous metallurgy.

Going back to the Arkhangelsk port, there is a good spatial division. Containers are going there. Arkhangelsk hub is not "showing off", but constantly doing its job. Forestry products are regularly coming there, but are not taken to Murmansk. Arkhangelsk is a traditional destination and transit point for many types of cargo. All in all, the most popular goods are going to Arkhangelsk. Railway connection again is better in Arkhangelsk. All cargo to Yamal goes through Arkhangelsk. Size of Arkhangelsk port is much bigger than Murmansk port. If one would like to store cargo there for a longer time it creates no problems. In Murmansk the absolute maximum for it is 7 days. Because of the natural limitations imposed by the sea and military zone there is no free space.

Comparing Murmansk with the Western hubs it can be said that most of them have good modern terminals: Saint-Petersburg, Baltic ports (for example, Ventspils). It is much cheaper there, and freight forwarders more and more often choose them. Those ports create new opportunities: they ask for financing from such institutions as European Bank of Reconstruction and Development, open a hub, give 20% discount, and the process starts. Their railway capacity allows to increased cargo flow. Those hubs are built for enormous volumes. Thus the potential is huge there. In such situation Murmansk loses its position as a logistics centre as such, because deep water does not play so big role anymore. Panamax is good for the bulk cargo, since container goods are not shipped in

such amounts. On the direction Singapore – Rotterdam it might be the case, but not here. That is why Saint-Petersburg's depth is enough for containers.

Concerning recently performed **developments** in the Murmansk hub, passenger transportation has improved. Previously touristic liners with 1000 people were processed in 4-5 hours, because all papers had to be checked. Now the procedure is easier and takes only 1 hour. This is done to attract people. Possibly there is the same in the other fields. But for ship documenting the development is opposite: it got even harder. Electronic and paper versions of documents are required together to make officers' work easier on the shippers' account.

Initiative for the Port Special Economic Zone is meant to ease customs procedures. Customs committee in general will be simplified a lot soon. Other developments concern improved roads (during last two seasons), though mainly federal roads. Reconstruction of the airport runways is yet another development. Many private companies reconstruct port territories. Norilsk Nickel is working on their terminal. Fish port is going to reconstruct its northern docs. Sea port also is going to develop. There is big activity in private companies' infrastructure development. Finally, suppliers for Pirazlomnoye platform have been determined, which is important given the correlation between oil and gas fields and hub development.

It was mentioned that plans were stopped by the crisis. It does not mean that nothing has been done at all, but the activity level was much lower than planned. The financing question is a vital one for many projects, including territory enlargement of the port, where formal decisions have already been done and expertise is carried on. Besides, the regional government is promoting the free economic zone in Murmansk. Until legislative change is done many activities are unprofitable in the region.

Thus, even if the development is being performed within the hub, still a lot has to be done. The following steps were named as the most critical ones to accomplish as soon as possible:

- Simplify procedures
- Increase port and railways capacity
- Develop West bank
- Find funds

As it can be seen, most of them are still infrastructure and regulation related.

7.2.5 Factors defining the potential of the Murmansk Hub

7.2.5.1 General Hub Development Factors

The hub development factors, most of which were mentioned above, are presented in the table below.

Table 4: Factors defining the potential of the Murmansk Hub

Group of factors	Individual factors
Geographic	<ul style="list-style-type: none"> • deep water, • ice-free port which results in all year round navigation and no ice dues
Political	<ul style="list-style-type: none"> • governmental directives aiming at regional development
Economic	<ul style="list-style-type: none"> • actors who want to invest (railways, port), • lower tariffs, • shelf projects (Prirazlomnoye and Shtokman), Yamal, • Northern Sea Route and its international potential, potential for transit and containerized goods*, • atom ice-breaking fleet, • supportive projects (West bank development, East bank modernization, special economic zone, etc)

* Those two factors will be described in more details in two separate sections below

Mentioned in the table development project like a plan for West Bank development, East Bank modernization, container terminal construction – were marked as dependent on the US and European economy recover, because until the real cargo flows appear no funds will be raised and no works will be started. Now main flow goes from Asia to Europe (Hamburg, Rotterdam, Antwerp, Baltic ports). Also a part of oil from the Shtokman development is planned to be shipped to EU, while the part for US is now in doubt. For transport related companies it is important that they have **cargo flow**, which is the main factor for hub development.

7.2.5.2 Northern Sea Route as a Hub development factor

The Northern Sea Route is perceived as a corridor with big development potential. As mentioned before, there is no piracy; it is much shorter, which means also less fuel costs. On the other hand it is difficult to use it for the foreign companies, because only Russia alone has all information about ice situation. There are few pilot projects, such as MV Nordic Barents (41,000 tons ice-class bulk

carrier) representing Danish – Norwegian partnership of Nordic Bulk Carriers AS and Tschudi Shipping Company, which sailed from Kirkenes via Murmansk to China in September 2010.

Figure 25: MV Nordic Barents



Source: Nordic Bulk Carriers AS

New law for the Northern Sea Route is being discussed now. Currently there is no route administration, involved parties functions are unclear. If there will be easily understandable instructions in English there will be more interest in the route, respondents think. Moreover, it needs to be specified who and how defines the necessity of ice-breakers in any given situation. The trend of global warming seems to make the NSR even better economically, thus it just needs to be legislatively supported.

Most of the respondents have an optimistic attitude that sooner or later the NSR will develop. Norilsk Nickel already plans to pass it. Also its use for container shipment and transit goods Europe-Asia is expected. Another example of the test sails is represented by the FCS Baltica with a dead weight of 100,000 t sailing to China. The ship was though loaded for half only to check if it is possible to go this way.

One respondent expressed his concern in relation to goods insurance on this Route. He explained the need for information about readiness from the insurance companies' side. If it is on place, 4-5 months a year (July - October) the Route can be used. However the Route's drawback is that its infrastructure dates back to 1980s and a thorough supply chain for distant regions is broken now. Thus, risks are hard to estimate.

There are two main difficulties for a foreign ship which wants to go by the Northern Sea Route: **reflagging** and **ice-breaking**. First the ship has to wait for the permission to sail on the NSR. Afterwards the border has to be open in the port of Murmansk or Arkhangelsk. The ice conditions change constantly from one year to another. Thus it is hard to say if there will be open waters all the way or not, which determines the need for ice-breakers. Besides, there is a wind pressure. Without ice-breakers it can sometimes be impossible to get through.

Yet an even more critical opinion suggests that now all the actors have wonderful logistics departments which assess all the options. They balance different routes judging by length, timing, prices, etc. They can compare Northern and Southern routes, different modes of transportation; that is why the tracks change very fast. So it can be said that the information is perfectly accessible. The transit Asia-America and the cargo flow to Rotterdam through NSR are expensive. If the ice melts as much as is required, then it can be discussed as an option. And currently the situation is the following: the main factors are fuel costs, tariffs and timing. If the total costs for NSR is 50 \$ per ton and the other routes suggest 45, customers will choose the latter.

7.2.5.3 Containers use potential as a Hub development factor

There are very different opinions in relation to container perspectives for Murmansk. Some respondents put them in direct relation with the use of the Northern Sea Route while others do not. Norilsk Nickel is an example of the company which already uses the container shipment to Dudinka. Some other examples of container use include transportation of fish. But for now in the Murmansk region that is mostly it, due to the absence of big market for that. General container cargo is not developed in the region.

Those respondents who relate the container development with the Northern Sea Route expect the different container cargo flow to increase from the direction of the South-East Asia, mostly the transit goods.

Those interviewees, who are doubtful about container potential, wonder why a container terminal should be built here, if there is no demand for that. The place for the terminal is fixed, and a plan exists. But the predicted cargo flow is not big. Currently it equals 100,000 TEU. But less than 1 million TEU is not economical. If it can be proven that the Trans-Siberian route is economical, it

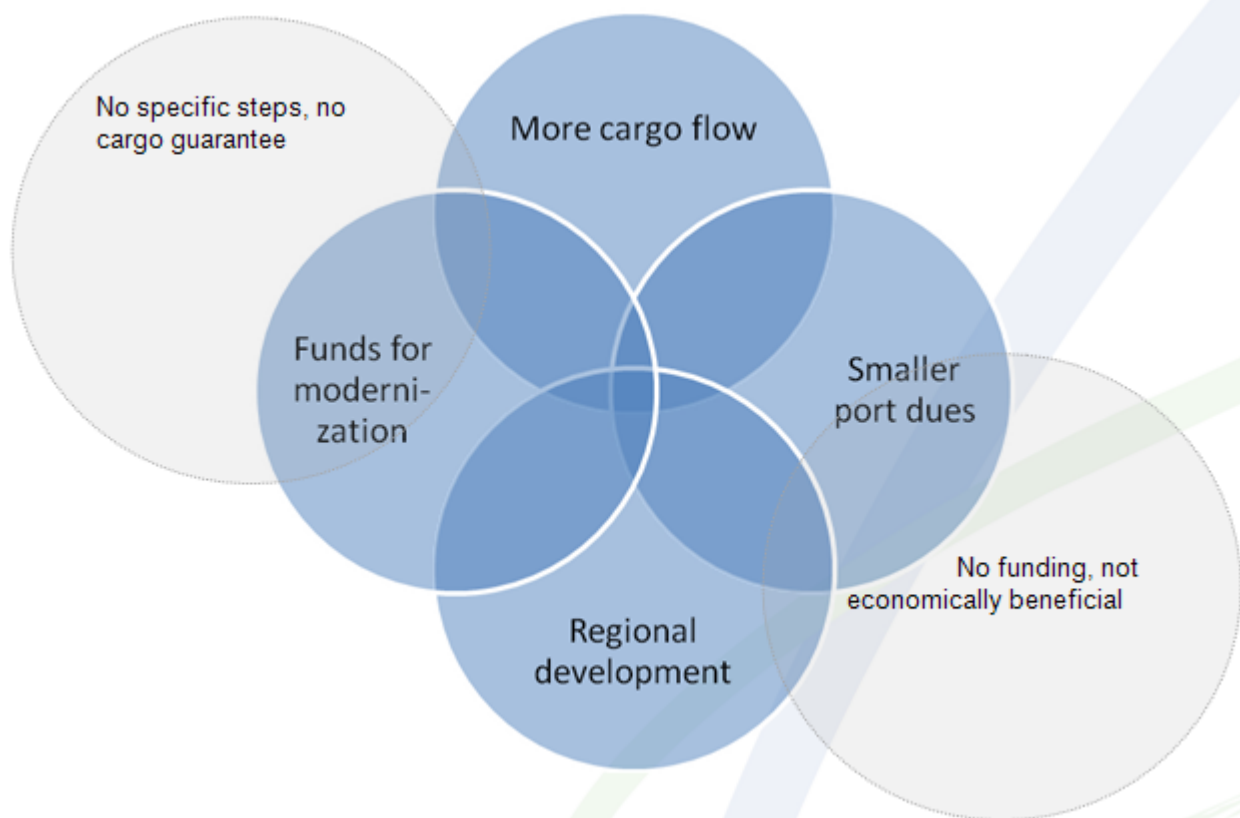
might be better, but not at this stage. However for now it still seems that it is cheaper to transport containers through Saint-Petersburg.

Speaking about official data, within the Murmansk Transport Hub development project the building of a container terminal (for 1 million TEU) will be undertaken. Part of containers will go for internal market, part for transit from North America, Canada and USA, and Northern Europe to the countries of Asia-Pacific region.

7.2.6 Respondents' attitudes and resources in relation to the Murmansk Hub development

The respondents' expectations and concerns in relation to the hub development are presented in the figure 26.

Figure 26: Expectations and concerns related to hub development



Generally, shippers expect more cargo flow, freight owners – smaller port dues, public authorities aim at regional development, and finally direct project beneficiaries wish to attract money for modernization.

Regarding interviewees' concerns, more or less the same answers were obtained from the majority of them: hub development is more declarative project than active steps; not many specific steps were undertaken so far; there is a need for cargo guarantee. Otherwise, in case of no cargo flow there will be no money and investment in the hub. Generally, as long as the project is not economically beneficial, the real well functioning hub will not be created.

Thus, general attitude ranged from skeptical to optimistic. Anyways, respondents seemed to support the idea of hub development and realize its need for their own organizations and the region.

Coming to the specific resources that the stakeholders were ready to invest, the following examples were obtained:

- Conducting seminars, lobbying of interests, education in logistics and other needed profiles
- Own infrastructure investment
- Regulatory, preparatory, controlling support

7.2.7 Respondents' opinion about the most interested and influential stakeholders of the Murmansk Hub

In case of Murmansk the most interested stakeholders tend to be also the most influential ones. They are:

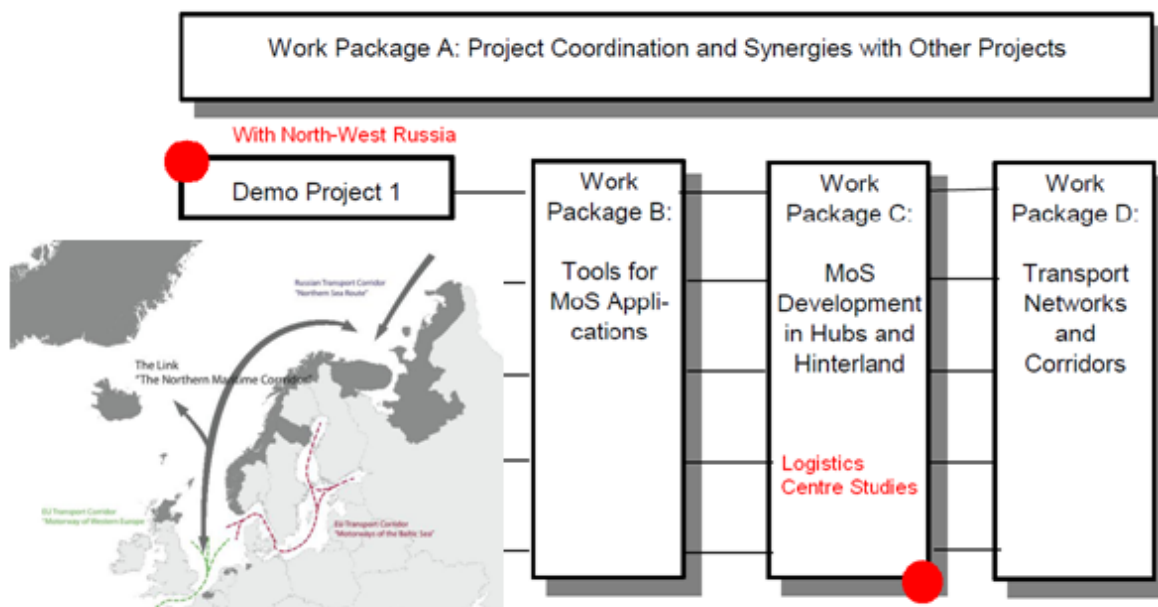
- **Port** – considered by many respondents as the most active stakeholder
- **Railways** – which will get an increase in capacity and improvement in infrastructure
- **Region** – just like in Arkhangelsk, a rise in attractiveness, taxes, and employment is expected
- **Transport service users** - if the cargo flows increase, there will be more stevedoring companies, customs brokers etc. Besides, roads improvement is a benefit
- **Big operators on shelf fields** - oil and gas companies will get improved infrastructure which will ease their work
- **Coal and container terminal users** – i.e. those working on Trans-Siberian Route

When the justification for the Murmansk Hub project was made, all possible stakeholders were contacted. However some of them (like the Fish Port) took a passive position. Others were very active and joined the project, thus being able to benefit from it.

8 Conclusions

This study was conducted as a part of the StratMoS project, which aim is to facilitate a dialogue between Europe and North-West Russia and create a well functioning intermodal maritime-based corridor connecting hinterlands of different countries. The current research belongs to Demonstration Project 1 of StratMoS. However also finding from the Work Package C were used in it. The interaction of different StratMoS parts for the purpose of this project is presented in Figure 27.

Figure 27: Place of the report within the StratMoS structure



The main aim of the research was to identify which organizational bottlenecks existed for logistics centre development in the regions, to what extent were the actors in Murmansk and Arkhangelsk regions ready to cooperate both physically and organizationally in terms of creating an open and integrated logistics center, and how to encourage this cooperation between potential stakeholders.

In order to reach this goal first the concepts of “Logistics Centre / Hub” and “Stakeholders” were analyzed. It was found that hub concept corresponds to cluster in its broader meaning, which includes several companies belonging to the same industry and situated at a limited geographical territory.

Thus, a **Logistics Centre** is “the hub of a specific area where all the activities relating to transport, logistics and goods distribution – both for national and international transit – are carried out, on a commercial basis, by various operators”. To be competitive, a logistics centre should:

- be **open** and **accessible** to all companies involved in the mentioned above activities
- contain **all necessary logistics facilities**
- provide high quality of services with **intermodal solutions**
- be run by a **neutral legal body**, preferably in form a Public-Private-Partnership

Moving to more specific cooperation concept within clusters, different elements, factors and outcomes of cooperation were discussed in both theoretical and methodological chapters.

Cooperation within the hub was defined as “complementary actions taken by firms in inter-dependent relationships to achieve mutual outcomes over time”. It can bring the following benefits:

- specialization
- cost reduction, economies of scale and scope
- increased exports
- increased innovation
- improved business environment (infrastructure, regulation)
- funding opportunities
- regional development

In order to assess cooperation between potential Logistics Centre stakeholders in Murmansk and Arkhangelsk, more than fifty structured questionnaires were sent out by fax and e-mail with follow-up calls. A response rate of 22.6% was reached, which allowed conducting an analysis of main trends and relations between variables where possible.

The business environment conditions in Arkhangelsk and Murmansk are quite different. For example, in Arkhangelsk infrastructure conditions need to be urgently improved, and in Murmansk relations with supporting/related industries and regulations need improvement. Speaking about cooperation, in Arkhangelsk the facilitation of interactions between all groups of actors and public and research institutions needs to be improved. Besides, the relations there lack closeness (in the matter of both frequency and character), trust (just like in Murmansk) and satisfaction from results (which could be possibly improved again by closer collaboration). Alternatively, in Murmansk there

are two “sub-clusters” in the matter of cooperation. Smaller companies cooperate with their clients, transport and logistics service providers, while larger ones collaborate more with governmental and research institutions. Apparently those tandems work well, because most of the respondents are quite satisfied with the results. What is more, the cooperation in Murmansk between actors is actually closer, meaning that the interactions there are more frequent and not only formal. Briefly the outcomes of the business environment and cooperation evaluation can be presented as follows.

Table 5: Cooperation evaluation summary

City	Murmansk	Arkhangelsk
Business environment	<ul style="list-style-type: none"> - Good demand and factor conditions - Weak perception of competition and supportive industries 	<ul style="list-style-type: none"> - Good demand, competition and supportive industries conditions - Weak factor conditions : infrastructure, financing, management
Cooperation	<ul style="list-style-type: none"> - Fragmented cooperation: small companies with clients and transport & logistics service providers; big companies with public & research institutions - Cooperation: low trust; high expectations, experience and closeness 	<ul style="list-style-type: none"> - Almost no cooperation at all with public and research institutions - Cooperation with other partners: low closeness; moderate trust, expectations and experience

After the first stage of analysis was completed, its outcomes were distributed among respondents and the arrangements for the interviews were done. The information bulletins sent to stakeholders are presented in Appendices 3 and 4.

The interview outcomes showed that the two potential hubs, Murmansk and Arkhangelsk have different specialization and complement each other. Murmansk currently focuses more on bulk products, while Arkhangelsk deals with various goods and was initially planned for general and containerized cargo. Both ports have their advantages and disadvantages, which determine their development programs. For example, Murmansk port possesses deeper waters and is ice-free. At the same time, Arkhangelsk hub has better railway connections and the only one modern and adequate container terminal in Northern Russia, which would allow it to become a Logistics Centre in its classical meaning. However because of ice dues Arkhangelsk port is more expensive, which seriously affects its competitiveness. It was mentioned that it also lacks popularity among European freight-owners and needs to be more widely promoted. However both hubs have a big potential for

development in relation to increasing activity along the Northern Sea Route and connected with it possibility for increased container flow. Besides, the strategic significance of the NSR and Murmansk and Arkhangelsk hubs found its reflection in the Federal programs and development projects. The problems of aging infrastructure and complicated regulation are currently addressed on regional and national levels. At the same time, main hub stakeholders (which according to our respondents are ports and railways) also undertake modernization projects aimed at increasing their capacities.

Addressing the hub problems which were mentioned in the introduction and regional overview, it must be said that many of them remained since the previous FDT study from 2007 and still concern most stakeholders. However, due to new impulses from the shelf and northern routes development, the situation is currently changing for some parameters. The table below represents the current situation on the major bottlenecks.

Table 6: Present situation in the hubs according to stakeholders

Bottlenecks	Arkhangelsk	Murmansk
Infrastructure	Situation is eventually changing and there is big hope in relation to shelf projects. However some problems remain	Still serious problem, but it slowly changing. Development slowed down by the crisis
Dependence on political decisions	No single opinion: some say that hub is independent and competitive, others require more governmental support	Dependence remained, but currently political decisions favor hub development
Customs	Everyone mentioned discussions about improvement, but some are skeptical, and the problem still exists	Problem remained, creates serious difficulties
Containers	The situation did not improve, some mentioned even decline	Still underused, but the potential foreseen
Ecology	No single opinion and actually no concerns about it	Is going to improve in the port, but shelf projects still create concerns

Now as we can see, there are still problems left related to infrastructure and regulation, which are hard to influence and which are currently getting attention on a higher level. Coming closer to the main topic of this paper, namely organizational and cooperative bottlenecks, it can be said that the respondents themselves do not see many bottlenecks there. In Murmansk they believe that the hub works on market conditions, meaning that each stakeholder has its own goals and strategy,

information is perfectly accessible, and the mechanisms of activity coordination in each definite case works well, which is proven by long collaboration experience. In Arkhangelsk the situation is a little different: respondents do not pay big attention to cooperative issues at all. Thus, it is a bottleneck for hub development. According to the survey outcomes, stakeholders would expect better results from working with their counterparts. In both regions the government is considered as an opportunity for receiving additional support, which they think should be provided to a greater extent. All in all, infrastructure problems and lack of active development prevail in the concerns of the stakeholders.

Thus, the respondents' opinions about hub development are not optimistic, but rather realistic. Besides, no one would like to take a lead role in its development, but instead rely on government and other stakeholders.

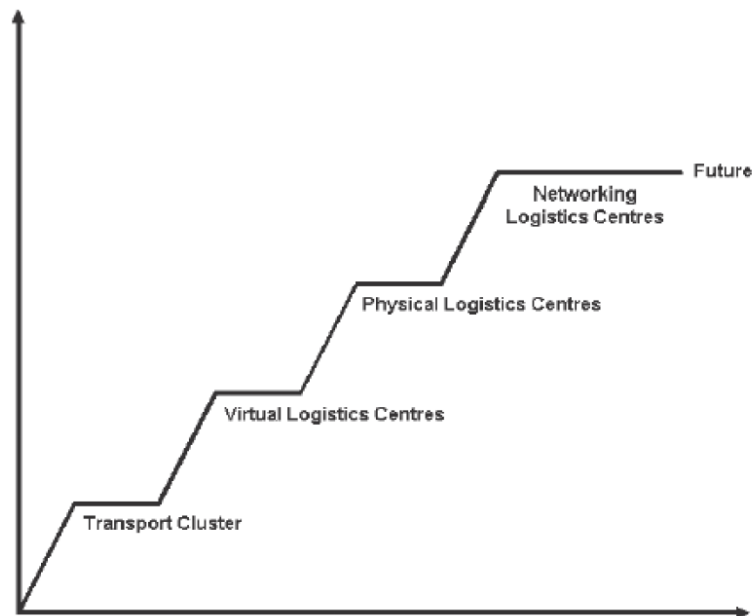
All in all, it can be concluded that the Logistics Centre is still not present in any of the regions, because the hubs as they are now do not meet the Logistics Centre prerequisites. In none of the cities there is an open and integrated centre containing all necessary facilities, and providing high quality of services with intermodal solutions. Besides, the actors seem not to realize the necessity for unifying their activities and taking active role in Logistics Centre creation.

9 Recommendations

Based on the conclusions provided, the following recommendations can be given to the hubs of Murmansk and Arkhangelsk.

Even despite some differences, both hubs are currently on their development stage, meaning that they did not reach the networking or even physical Logistics Centre stage, but are rather transport clusters only, following the development path presented above. At the same time, they can become virtual Logistics Centres due to good internal communication and information exchange.

Figure 28: Logistics Centre stages of development



Source: Bentzen, 2003

So far none of them can be called a Logistics Centre with all requested characteristics, but taking into account arising stimuli from shelf projects, the Northern Sea Route and overall economic rise up after the crisis, supported by political decisions and modernization projects initiation, they can become real hubs, provided that:

- **Infrastructure development** projects are implemented **without delays**, stimulated from both private stakeholders' and government side;

- **Business environment** (legislative, investment etc.) is **improved**, including the Special Economic Zone project implementation;
- Hub management is facilitated through **Public-Private Partnership** in its actual, and not only in a declarative meaning: public authorities should be perceived not just as an environment, but also as active partners;
- Importance of **innovation, quality issues and environmental considerations** is **promoted**, so that hub development would not damage the long-term regional sustainability;
- **Awareness rising** actions are conducted on the **permanent basis inside and outside the hub**, which includes:
 - dissemination of research results,
 - best practices presentation,
 - seminars and conferences about the benefits provided by relationship management and clustering;
- Cooperation between all groups of stakeholders mentioned in this report is stimulated by means of **common projects, associations, networking** with potential foreign partners, **promoting** Murmansk and Arkhangelsk Logistics Centres.

Indeed, mentioned in the previous bullet point relatively simple awareness raising tools should be supplemented by deeper knowledge transfer in order to ensure common understanding of the Logistics Centre features and importance. Potentially there might be a lot of misunderstandings related to perception of Logistics Centres, and to overcome them, it is crucial to maintain a constant dialogue between the hub stakeholders.

Besides, currently there is a tendency of networks support from European governments, which aims at promoting efficiency, networking, and cooperation within and between clusters, corridors, and whole regions. Thus, a lot of information, findings and examples are available. Tools for further Logistics Centres development can be obtained, for instance, through dialogue with existing national Logistics Centres Associations like FDT, or with the officially approved European Network of Logistics Centres – EUROPLATFORMS EEIG.

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34. http://www.ascp.ru/en_htm/1.htm - Arkhangelsk Sea Commercial Port
35. <http://www.portmurmansk.ru/index.phtml?100> – Murmansk Sea Commercial Port
36. <http://en.msco.ru/> - Murmansk Shipping Company
37. <http://ansc.ru/Inf.shtml> - Northern Shipping Company
38. <http://www.gov-murman.ru/> - Government of the Murmansk region
39. <http://www.dvinaland.ru/> - Government of the Arkhangelsk region
40. <http://www.murmanshelf.ru/> - Association of suppliers of oil and gas industry in Murmansk Murmanshelf
41. <http://www.sozvezdye.org/index.php?lang=en> – Support Centre for suppliers of oil and gas industry in Arkhangelsk Sozvezdye

Organizations which participated in the research by answering the questionnaire and/or giving the interview

Murmansk

Belomortrans – Murman

Ministry of Transport and Communications of the Murmansk Region

Murmanshelf

Murmansk Sea Commercial Port

Murmansk Sea Fishing Port

Murmansk Shipping Company

Norilsk Nickel Murmansk Transport Branch

Ramboll Barents

Rosmorport

Arkhangelsk

Arkhangelsk River Port

Boreal Shipping

Bunker Company

Ministry of Economic Development of the Arkhangelsk Region

Ministry of Industry, Transport and Communications of the Arkhangelsk Region

Mortek

Northern Shipping Company

Polar Lights Company

Sea Commercial Port of Arkhangelsk

Sevmorconsalt

Sozvezdye

Trans-NAO

Uroshnikov V.G. – independent opinion



Appendix 1 Questionnaire Russian version (sent to respondents)

«__» мая 2010г.

Уважаемый _____,

Мы бы хотели предложить Вам ответить на несколько вопросов о развитии транспорта на Северо-западе России для StratMoS. Это Ваша возможность принять участие в проекте Европейского Союза, проводимого в сотрудничестве с Россией. Ваша организация была специально отобрана для данного исследования.

Участие в опросе не займет более 10 минут Вашего времени, и все ответы останутся анонимными.

Если у Вас возникнут какие-либо вопросы, пожалуйста, обращайтесь к Инне Гвоздарёвой (FDT, Дания) по электронной почте: ig@ntu.eu или телефону +45 99 30 00 13. Мы будем рады Вам ответить!

Welcome to the StratMoS survey! We would like to ask you to fill out the questionnaire – this is the opportunity for your organization to participate in the important European Union project conducted in cooperation with North-Western Russia and aimed on improving transport in your region.

The questionnaire should not take more than 10 minutes of your time and all answers will remain anonymous.

If you should have any questions, please contact Inna Gvozdeva: ig@ntu.eu or phone +45 99 30 00 13.

1. Какую организацию Вы представляете?

- ☐ Государственное учреждение
☐ Полугосударственная организация, партнерство государственного и частного секторов
☐ Частная организация
☐ Другое _____

2. В какой отрасли работает Ваша организация? _____

3. Сколько человек работает в Вашей организации?

- ☐ 1-10
☐ 11-20
☐ 21-50
☐ 51-100
☐ Более 100

4. Оцените транспортные услуги в Вашем регионе, которыми пользуется Ваша организация

Услуга	Отличное качество услуги	Хорошее качество услуги	Удовлетворительное качество услуги	Неудовлетворительное качество услуги	Наша организация не пользуется данным видом услуг
Погрузочно-разгрузочные работы в порту	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Транспортно-экспедиторское обслуживание	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Морские перевозки	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Транспортировка до порта	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Хранение грузов в порту	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Таможенное оформление	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Страхование грузов	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



5. Доступны ли эти услуги для всех частных и государственных организаций, которые хотели бы ими воспользоваться?

Услуга	Полностью доступна	В определенной степени доступна	Скорее недоступна	Полностью недоступна	Наша организация не пользуется данным видом услуг
Погрузочно-разгрузочные работы в порту	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Транспортно-экспедиторское обслуживание	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Морские перевозки	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Транспортировка до порта	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Хранение грузов в порту	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Таможенное оформление	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Страхование грузов	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Как бы Вы оценили состояние инфраструктуры (густота сетей дорог и путей, состояние техники, частота отправок и время в пути) в Вашем регионе?

Элемент инфраструктуры	Отличное состояние	Хорошее состояние	Удовлетворительное состояние	Неудовлетворительное состояние	Наша организация не пользуется данным элементом инфраструктуры
Железная дорога	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Внутренние водные пути	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Автомобильные дороги	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Склады	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Согласны ли Вы со следующими утверждениями?

	Полностью согласен (на)	Скорее согласен (на)	Скорее несогласен (на)	Полностью несогласен (на)	Неприменимо к роду деятельности нашей организации
Для наших клиентов очень важно, что мы поставляем нашу продукцию/оказываем услуги вовремя	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Наши клиенты ожидают высокую частоту поставок/оказания услуг	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Для наших клиентов имеет большое значение, используем ли мы в работе передовое оборудование и предлагаем ли мы инновационные решения	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Для наших клиентов важно соответствие нашей продукции/услуг стандартам качества	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Наши клиенты обращают внимание на то, проявляем ли мы заботу об окружающей среде в нашей работе	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



8 . Как бы Вы охарактеризовали конкуренцию в Вашей отрасли в регионе?

- ☐ У нашей организации нет конкурентов
- ☐ Незначительная конкуренция
- ☐ Умеренная конкуренция
- ☐ Серьезная конкуренция
- ☐ Очень жесткая конкуренция

9 . Участвует ли Ваша организация в каких-либо совместных проектах с другими организациями, работающими в той же отрасли?

- ☐ Да
- ☐ Нет (переходите к вопросу 11)

10 . Какого рода эти проекты?

11 . Сотрудничает ли Ваша организация с образовательными или правительственными учреждениями?

- ☐ Да
- ☐ Нет (переходите к вопросу 13)

12 . В какой форме проходит сотрудничество?

13 . Как часто Ваша организация взаимодействует с партнерами по совместным проектам?

	Раз в год или реже	Несколько раз в год	Примерно раз в месяц	Каждые 1-2 недели	Практически ежедневно
Клиенты	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Организации, работающие в той же отрасли, что и Ваше учреждение	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Транспортные предприятия	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Поставщики логистических услуг	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Правительственные учреждения	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Образовательные и исследовательские институты	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

14 . Когда сотрудники Вашей организации встречаются с партнерами из других учреждений, чтобы обсудить совместные проекты, эти встречи проходят:

- ☐ Преимущественно на формальном, деловом уровне
- ☐ На формальном уровне, но с использованием таких персонифицированных средств связи как электронная почта или факс
- ☐ Главным образом на неформальном, социальном уровне
- ☐ На формальном и неформальном уровне, преимущественно в формате «один на один»
- ☐ Как на формальном, так и на неформальном, социальном уровне (но не «один на один»)



15 . Если бы Ваша организация начинала совместный проект с другим учреждением, чего бы Вы ожидали от партнера? (пожалуйста, разделите 100 пунктов между категориями)

Честность и открытость	
Компетентность	
Привычка исполнять обещания	
Готовность оказывать помощь, когда это необходимо	
Итого	100

16 . Как бы Вы оценили результаты сотрудничества с Вашими партнерами?

	Мы добились значительных успехов	Мы добились определенных результатов	Результаты от сотрудничества скорее скромные	Результаты незначительные	Наша организация не сотрудничает с данной группой учреждений
Клиенты	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Организации, работающие в той же отрасли, что и Ваша	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Транспортные предприятия	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Поставщики логистических услуг	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Правительственные учреждения	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Образовательные и исследовательские институты	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

17 . Как Вы считаете, находится ли Ваша организация в каком-либо транспортном узле (хабе)?

Транспортный узел (хаб) – это центр в определенной географической зоне, в пределах которого различные операторы на коммерческой основе предоставляют все виды услуг, относящиеся к транспорту, логистике и распределению товаров для национального и международного транзита.

- ☐ Да
- ☐ В какой-то мере
- ☐ Нет (переходите к вопросу 20)

18 . В какой степени транспортный узел предоставляет следующие преимущества для Вашей организации и области в целом?

	Полностью предоставляет	В определенной степени предоставляет	Скорее не предоставляет	Совершенно не предоставляет
Увеличение экспорта	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Повышение инновационной способности	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Рост занятости	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Улучшение бизнес-среды (инфраструктура, правовое регулирование)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Привлечение организаций и инвестиций	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Снижение издержек	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Улучшение доступа к источникам финансирования	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



19 . И последний вопрос: Что бы Вы отнесли к главным проблемам транспортного узла в Вашем регионе?
(Пожалуйста, выберите 3 наиболее важные проблемы).

- ☐ Недостаточное финансирование
- ☐ Недостаток опыта, знаний
- ☐ Неэффективное управление
- ☐ Конкуренция извне
- ☐ Недостаток сотрудничества между участниками
- ☐ Недостаток новых идей и невозможность их воплощения
- ☐ Тяжелая экономическая ситуация в регионе
- ☐ Проблемы инфраструктуры, изношенность фондов
- ☐ Отсутствие поддержки со стороны государства
- ☐ Другое

20 . Принесло бы пользу Вашей организации создание транспортного узла в Вашем городе?

- ☐ Да
- ☐ Нет

21 . Если да, для каких целей он нужен?

- ☐ Увеличение экспорта
- ☐ Повышение инновационной способности
- ☐ Рост занятости
- ☐ Улучшение бизнес-среды (инфраструктура, регулирование, в т.ч. правовое)
- ☐ Привлечение организаций и инвестиций
- ☐ Снижение издержек
- ☐ Улучшение доступа к источникам финансирования
- ☐ Другое

22 . Если нет, почему?

*

*

*

Мы благодарим Вас за Ваше время и участие в исследовании!
Ваши ответы очень важны для нас.

Просим вернуть заполненную анкету по факсу: +45 99 30 00 01



Appendix 2 Questionnaire English version

1. What type of organization do you represent?

- Public body, government agency
- Semi-public body, public-private partnership
- Private organization
- Other: _____

2. In which industry does your organization operate? _____

3. How many people work in your organization?

- 1-10
- 11-20
- 21-50
- 51-100
- More than 100

4. Evaluate those of the transport and logistics services provided in your region which you are using at your work.

Service	Excellent	Good	Satisfactory	Unsatisfactory	Do not know
Stevedoring					
Forwarding					
Sea shipping					
Transportation to the port					
Storage					
Customs clearance					
Cargo insurance					

5. Are those services open for all private and public companies which want to use them?

Service	Fully open	Open to some extent	Rather not open	Not open at all	Do not know
Stevedoring					
Forwarding					
Sea shipping					
Transportation to the port					
Storage					
Customs clearance					
Cargo insurance					



6. How would you assess the condition of the following hinterland facilities in your region (network of roads and ways, condition of equipment, frequency and timing)?

Facility	Excellent	Good	Satisfactory	Unsatisfactory	Do not know
Railways					
Inland waterways					
Roads					
Distribution centre					

7. Do you agree with the following statements?

	Strongly agree	Agree	Disagree	Strongly disagree	Do not know
For our clients it is very important that we provide our products/ services on time					
Our clients expect high frequency of product/ service delivery					
Our clients pay attention to how modern equipment do we use and how innovative solutions do we offer					
It is important for our clients that we follow quality standards					
Our clients pay attention to whether or not we take care of environment in our operations					

8. How would you characterize competition in your industry in the region?

- Our company has no competitors
- Small
- Moderate
- Serious
- Very tough

9. Are you involved in any common projects with other organizations which operate in the same industry as you?

- Yes
- No

10. If yes, then what kind of projects are they? _____



11. Do you cooperate with academic or governmental institutions?

- Yes
- No

12. If yes, how? _____

13. How often do you interact with the following partners (with whom you have common projects)?

	Once a year or more rarely	Several times a year	Approximately once a month	Every 1-2 weeks	Almost every day
Customers					
Organizations which operate in the same industry as you					
Transport organizations					
Logistics service providers					
Governmental institutions					
Academic and research institutions					

14. When people from your organization meet with people from other organizations to discuss common projects, it is (or they will expect it to be):

- Mainly at formal, business level
- Mainly at formal level, yet personalized via the use of technology (fax, e-mail)
- Mainly at an informal, social level
- Mainly at a formal and informal levels on a one to one basis
- At both a formal, business and informal, social levels (but not in a one-to-one basis)

15. If your organization was to be involved in common project, indicate what would you expect from the partner the most (please divide 100 points between the categories):

Be frank and honest	
Be capable and competent	
Keep the promises	
Offer help when needed	
Total	100

16. How would you assess achievements from the cooperation with your partners?

	Significant	Moderate	Rather small	Insignificant	Non-applicable
Customers					
Organizations which operate in the same industry as you					
Transport organizations					
Logistics service provides					
Governmental institutions					
Academic and research institutions					

17. Do you believe your organization operates in some kind of logistics center?

A *Logistics Centre* is a centre in a defined area within which all activities relating to transport, logistics and the distribution of goods - both for national and international transit, are carried out by various operators on a commercial basis. A Logistics Centre is open to all participants and is equipped with all facilities to carry out the above-mentioned operations.

- Yes
- To some extent
- No

If yes and to some extent:

18. To which degree does the logistics centre provide the following benefits?

	Fully	Somewhat	Rather not	Not at all
Increase exports				
Increase innovation				
Increase employment				
Improve business environment (infrastructure, regulation)				
Attract firms and investment				
Reduce production costs				
Seek funds				



19. What do you consider as the main bottlenecks of the logistics centre? (Please, choose three most important)

- Insufficient financing
- Lack of competence
- Ineffective management
- External competition
- Lack of cooperation between participants
- Lack of new ideas and commercialization
- Poor economic situation
- Infrastructure
- Lack of government support
- Other _____

If no:

20. Would it be useful for your organization to have a logistics centre established in your city?

- Yes
- No

21. If yes, which purposes would it serve for?

- Increase exports
- Increase innovation
- Increase employment
- Improve business environment (infrastructure, regulation)
- Attract firms and investment
- Reduce production costs
- Seek funds
- Other _____

22. If no, why not? _____



Appendix 3 Executive summary Arkhangelsk



(Position) _____

(Name) _____

«_» June 2010

Re: Findings of the survey concerning opportunities of logistics centre development in Arkhangelsk

Let us once again thank you for participating in **StratMoS survey**! As promised we are sending you the executive summary of our findings. The full version of report containing the survey outcomes as well as other related studies will be published on the StratMoS website (www.stratmos.com) in late autumn 2010. Again, should you have any questions feel free to contact us by e-mail: ig@ntu.eu, or phone: +45 99 30 00 13.

The survey was conducted as a part of StratMoS framework project financed by European Union in order to facilitate a dialogue between Europe and North-West Russia and create a well functioning intermodal maritime-based corridor connecting hinterlands of different countries. The main aim of research was analysis of organizational issues of logistics centre creation in Arkhangelsk.

***A Logistics Centre** is the hub of a specific area where all the activities relating to transport, logistics and goods distribution – both for national and international transit – are carried out, on a commercial basis, by various operators.*

To be competitive, a logistics centre should:

- be open, or accessible, to all companies involved in the mentioned above activities
- contain all necessary facilities, be served by a variety of transport methods (roads, rail, sea, inland waterways, air)
- provide high quality of services with intermodal solutions
- be run by a neutral legal body, preferably in form of PPP, or Public-Private-Partnership

Arkhangelsk is the “capital” of the Northern Sea Route equipped with good railway connections and showing positive dynamics of development in recent years. Demand, competition and related industries conditions in the region are favoring hub development, while factor conditions require improvement. It refers mostly to **physical condition of infrastructure** (which was marked as one of the biggest bottlenecks by 83% of respondents) as well as **governmental support** (67%), **financing** (50%) and **management** (50%).

The cooperation of participants with related industries, transport and logistics service provider is at higher level than that with public bodies and research institutions. In general **public authorities are**



perceived more as “environment” than “partner” in common projects. Alternatively, the major European hubs developed around ports are characterized by high cooperation with public authorities and research institutions. This allows increasing an access to highly qualified labor force and enhancing innovativeness, thus stimulating the overall competitiveness of a logistics centre.

If we look at **cooperation between other partners**, it is mostly going on **in formal form** (80% of respondents) and generally **not very frequently** (interactions on common projects take place in average once a month with clients and transport & logistics organizations, and once a year with public bodies and research institutions), **which reveals lack of closeness in common actions.** Again, best Western practices show that frequent interactions with informal element help knowledge flow, common culture development and enhance trust which, in its turn, decreases transaction costs.

In Arkhangelsk, **trust** (and especially such its element as reliability) is valued less then competence. This means that in best case partners want each other to be honest, but they do not expect the ability to help and undertake extra actions when needed or to be perfectly predictable in one’s behavior. This makes organizations rely only on themselves. Meanwhile, if contractual relationships would be supported by mutual trust the overall collaboration could be more productive.

Indeed, judging by the fact that respondents estimate **results from cooperation with their partners as moderate**, there still is room for improvement and not all goals are being reached. The same applies to cluster performance, which is currently not fully providing benefits expected by stakeholders. However positive information is that **more than 80% of respondent** believe that they belong to some kind of cluster. The rest 20% would like to have in established in the region.

The overall **recommendations for cluster development** are the following:

- Infrastructure improvement
- Improvement of business environment (legislative, financial)
- Management improvement through PPP (public-private partnership) facilitator
- Awareness rising actions
- Promoting of importance of innovation, quality issues and environmental considerations
- Stimulation of cooperation: common projects suggestions from public bodies
- Seminars and conferences about the benefits provided by relationship management

Some of those activities are scheduled for August 2010, when either a workshop or individual meetings with business and authorities representatives will be held. Please let us know if you are interested in participating in them.



Appendix 4 Executive summary Murmansk



(Position) _____

(Name) _____

«_» June 2010

Re: Findings of the survey concerning opportunities of logistics centre development in Murmansk

Let us once again thank you for participating in **StratMoS survey**! As promised we are sending you the executive summary of our findings. The full version of report containing the survey outcomes as well as other related studies will be published on the StratMoS website (www.stratmos.com) in late autumn 2010. Again, should you have any questions feel free to contact us by e-mail: ig@ntu.eu, or phone: +45 99 30 00 13.

The survey was conducted as a part of StratMoS framework project financed by European Union in order to facilitate a dialogue between Europe and North-West Russia and create a well functioning intermodal maritime-based corridor connecting hinterlands of different countries. The main aim of research was analysis of organizational issues of logistics centre creation in Murmansk.

*A **Logistics Centre** is the hub of a specific area where all the activities relating to transport, logistics and goods distribution – both for national and international transit – are carried out, on a commercial basis, by various operators.*

To be competitive, a logistics centre should:

- be open, or accessible, to all companies involved in the mentioned above activities
- contain all necessary facilities, be served by a variety of transport methods (roads, rail, sea, inland waterways, air)
- provide high quality of services with intermodal solutions
- be run by a neutral legal body, preferably in form of PPP, or Public-Private-Partnership

Murmansk is an important port on the Barents Sea with favorable location and dynamically developing environment. It has a **good demand and factor conditions for creating a hub**. This means that on one hand infrastructure of the region is on at least satisfactory level (with positive trends in improvement), and on the other hand demand imposes high standards to be kept in order to satisfy clients. However most respondents do not consider the competition in their industries as really tough (**60% believe the competition is moderate, 40% see almost no competition at all**), which could mean not enough stimuli for increasing competitiveness. And finally speaking about supportive and related industries, respondents do not seem to be much involved in common projects and focus on innovation development. To sum up, the basic conditions for creating a hub are present in the region. However, **further awareness raising activities are required** in order to improve environment for logistics centre development.

The cooperation between stakeholders is rather fragmented. It can be seen that smaller and more specialized companies cooperate with clients, transport and logistics service providers while bigger organizations tend to cooperate with public institutions. For comparison, the major European hubs developed around ports are characterized by high cooperation with all stakeholders. This allows increasing an access to highly qualified labor force and enhancing innovativeness, thus stimulating the overall competitiveness of a logistics centre.

The relatively high frequency of interactions between partners is supported by different modes of communication which generally can create common environment favoring cluster building. Thus it can be said that the **cooperation between hub stakeholders in Murmansk is quite close**. Again, best Western practices show that frequent interactions with informal element help knowledge flow, common culture development and enhance trust which, in its turn, decreases transaction costs.

In Murmansk **trust** (and especially such its element as reliability) is valued less then competence. This means that in best case partners want each other to be honest, but they do not expect the ability to help and undertake extra actions when needed or to be perfectly predictable in one's behavior. This makes organizations rely only on themselves. Meanwhile, if contractual relationships would be supported by mutual trust the overall collaboration could be more productive.

Previous experience of collaboration with partners is quite high among respondents, which means that those groups of partners mentioned above work well together and are actually able to reach common goals. Overall it appears that organizations in Murmansk have positive experience as well as realistic expectations from clustering which would favor logistics centre creation.

60% of respondents believe that they are located in some sort of hub. 20% somewhat agree with that, and 20% think that they are not situated in any logistics centre. Meanwhile the opinion about cluster benefits and problems differ sufficiently which does not allow to say determinately whether the logistics centre in its present state fulfills its tasks or not. Anyways its further development seems reasonable and expected by respondents.

The overall **recommendations for cluster development** are the following:

- Improvement of business environment (legislative, financial)
- Management improvement through PPP (public-private partnership) facilitator
- Awareness rising actions (about logistic centres / hubs)
- Competition stimulation
- Promoting the importance of innovation, environmental considerations, and trust
- Seminars and conferences about the benefits provided by relationship management
- Enhancing cooperation between public and private sector: common projects suggestions from public bodies

Some of those activities are scheduled for August 2010, when either a workshop or individual meetings with business and authorities representatives will be held. Please let us know if you are interested in participating in them.



Appendix 5 Interview guidelines

*** At the start of the interview, the interviewer SHOULD ask the interviewee whether or not they wish to remain anonymous. If they do, then their names and organisation name will not be used when referring to any ideas/answers we use that may refer to something they said ****

Interview Parts:

Part 0: Introduction / General Information (About StratMoS, purpose, interviewee, role, etc.)

Part I: Perception of the Logistics Centre

Part II: Specific questions for different groups of stakeholders

Part III: Influence of Logistics Centre on respondent

Part IV: Opinion about other Stakeholders

Part V: Awareness rising / information distribution

Part VI: Any other matters + Closing

The core idea and aim of the StratMoS project is to promote and facilitate a shift of cargo from road to sea based intermodal transport, and improve accessibility within the Barents Sea Region by supporting the implementation of Motorways of the Sea (MoS) and related transport networks in an integrated logistical chain.

The StratMoS project is funded by the EU and the Norwegian government through the Interreg IV B North Sea Region Programme. The project currently comprises for the time being 27 partners from Denmark, Norway, Scotland, England, the Netherlands, Belgium and Germany.

As part of DP-1, we are working on ways to reveal and eliminate organizational and cooperational barriers for hub development in Murmansk / Arkhangelsk.

We would now like to ask you few specific questions about your opinion regarding the potential of the transport hub in your city.

I. Perception of the Logistics Centre

1. How do you understand a concept of Logistics Centre? Do you think there is a Logistics Centre in Murmansk / Arkhangelsk?

If yes:

2. Describe how it functions? Who is managing it? Which decisions (concerning its development) are made in national / regional / local levels?
3. Would you characterize it as important transport hub in the Barents Sea region?
4. How competitive do you think the LC is? Why? What is the potential?
5. Is there a possibility to attract more cargo? What should be done for that?
6. Which developments (infrastructure and regulation related) have been made? What should be done?

If no:

7. Would you like to have it established?
8. Is there a potential and need for it in the region?

II. Specific questions for different groups of stakeholders (ports, transport companies, businesses, authorities) – presented in the end of the interview guidelines



III. Influence of Logistics Centre on respondent

9. What benefits could the Logistics Centre provide to you?
10. What are your concerns about LC / potential disadvantages for your organization?
11. Do you in general support or oppose the idea of Logistics Centre establishment?

If support:

12. How could you contribute to LC development?
13. What do you actually do?
14. Do you have financial or human resources to support the LC development?

If oppose:

15. In what manner would you demonstrate your opposition?

IV. Opinion about other Stakeholders

16. Which other organizations are involved in the LC development? The most active?
17. Why are they supporting the LC? What would they gain?
18. Are there some Stakeholders who have opposing interests? Which?
19. Which Stakeholder do you believe will be in conflict with the LC's interests?

V. Awareness rising / information distribution

Please have a look at those materials concerning the LC

VI. In addition

- Do you have any other relevant information, topics to discuss or materials?
- If you come across anything later on, please do not hesitate to contact me.

Specific questions to different groups of stakeholders:

Port authorities

1. Can you tell me a bit about your port?
 - a. What are some of the main commodities being shipped to/from the port?
 - b. How is import / export balance? Containers?
 - c. Which cargo comes from where – place of origin?
 - d. What are some the important projects are you involved with today?
2. Why do you think firms choose to use your port – what factors made it an attractive place to locate? Explain.
3. Could you please describe business strengths of your region?
 - a. What are the main industries and how does the port support them?
 - b. Are there any future initiatives planned which aim at tapping into the region's strengths?
4. In your opinion, how can the Logistics Centre affect the regional development (business enterprises)?
5. Can you describe some of your strategies for improving transport networks to and from the ports? (Specific initiatives, who takes the active role in this?)



6. Is there a possibility to attract more cargo?
7. What are perspectives of the Northern Sea Route?

Regional authorities

1. Can you describe what your department does in terms of business development in the region? What are some of the underlying principles for development in your region and what are your plans to support and develop them?
2. In general, how do you promote the attractiveness of the Region? Explain.
3. How important is the port for the economic development of your region? Are they included in the development of economic plans? If so, how?
4. How is the region encouraging new firms to locate here?
 - a. What assistance is offered?
 - b. Can you highlight some of the positive results you have achieved?
 - c. Have there been any problems/challenges you have encountered? Explain.
 - d. Is there a certain sector that you focus your marketing efforts on?
5. What is your role in securing high standard infrastructure (rail and road) to/from the port?
 - a. Which major infrastructure investments are planned and can support a LC in the region?
 - b. Which investments have been already made?
6. What role/how does R & D play in the region? How do you support the facilitation of knowledge between the companies/networks/ institutions?

Transport & logistics service providers

1. On the land side, who are your partners (forwarders, firms, etc.)? Where are they located?
2. How involved are you with the integration (of stakeholders) along the transport chain?
3. How does coordination work between the port, port companies and firms in the hinterland and your company? Do you have any ideas for ways to improve this communication?
4. What are some things you would like to see more of (in terms of coordination)?

Logistics Centre users / businesses

1. Can you describe what your firm does (produces)?
2. Why did you choose this location (Murmansk / Arkhangelsk) – what factors made it an attractive place to locate? Explain.
3. Are you currently in/or a member of a business association/network? Which one(s)?
4. Can you describe some of your transport related strategy?