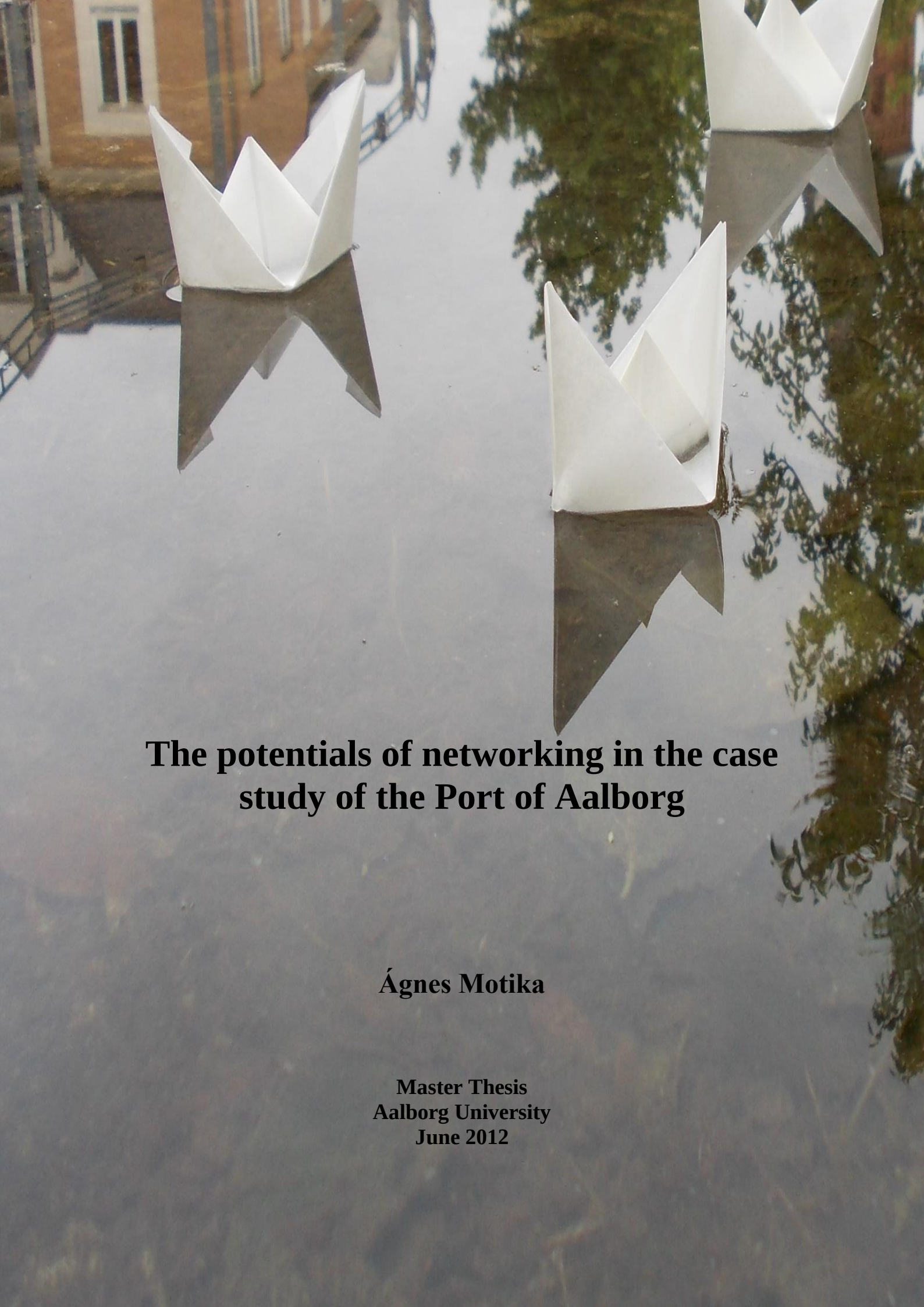

The potentials of networking in the case study of the Port of Aalborg

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I. Title page

Title: The potentials of networking in the case study of the Port of Aalborg

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Abstract

The case study of the Port of Aalborg is in the middle of focus in this thesis, which seeks to answer the question of how the networking activities of the Port of Aalborg have potentials for sustainable solutions. The paper mainly focuses of the networking activities of the harbour. Qualitative interviews are used as a tool for gathering information, not just from the Port of Aalborg but also from five of its most important business partners (companies and networks as well). Based on the networking theory, the analysis focuses on the actor bonds, activity links and resource ties of the harbour. The results show that the Port of Aalborg participates actively in networking; it has strong collaboration with its partners. Although networking is not consciously used as a tool for achieving sustainability it has great potentials for the future.

II. Acknowledgement

This research project would not have been possible without the support of many people. First and foremost, I would like to thank my supervisors, Søren Kerndrup and Martin Lehmann for the valuable guidance and advice. I truly appreciate all the remarks and useful suggestions throughout my work and the time they devoted to helping my all the way.

I also have to thank all the employees from the Port of Aalborg, who gave me not only interviews but helpful ideas, guidance and contacts. The author would also like to convey thanks to the interviewees from RALOG, CELOG, HubNorth, Artic Business Network and Netværk 9220. I really appreciate all the information they provided me, showing me around their workplaces and even inviting me to a conference.

Special thanks to my family who supported me all the way and made it possible for me to complete my education in Denmark, no words can express my gratitude. I also wish to thank Michele for always believing in me and for all the understanding, endless patience and encouragement when it was needed the most.

III. Summary

First I would like to give a short overview of how the thesis is structured and what information the chapters contain (see table 1). In the *introduction* the changing attitude and policies to solve environmental problems is presented. Control and command policies are still used, but there is a growing attention towards voluntary agreements and softer policies, where the emphasis is on knowledge sharing and networking, since companies possess the skills and the knowledge to come up with new environmentally friendly solutions.

Table 1. Overview of the thesis

Introduction	Environmental problems, companies as both cause and solution
Literature review	How companies can contribute to sustainability, networking, physical and relational proximity
Problem formulation	Networking, case study: Port of Aalborg
Methodology	Qualitative method, interpretative approach and constructivism, interviews
Theory	Networking theory: actors, activities, resources etc…
Description	Port of Aalborg and its partners
Analysis	How the Port sees the companies and networks (its partners) How the companies and networks see the Port
Conclusions	What are the potentials for networking in this case study?

Source: own design

The *literature review* shows that the *most important condition*, to achieve a knowledge creating local network, where environmental friendly solutions could occur through networking, *is the relational proximity. Relational proximity* means the cultural closeness, the ability to cooperate, and common values of actors are needed for the fusion of knowledge. In the *problem formulation* it is showed how the problem could be applied to the case study of the Port of Aalborg, where it is assumed that due to the rich networking activities and knowledge sharing, it has a potential to sustainable development. To understand the quality of the networks of the Port of Aalborg, networking theory is used that focuses on *actors, activities and resources* as the main binding power among companies in a network. Qualitative interviews are used as tool to collect information about the Port of Aalborg and its partners regarding their business relationship. After describing the companies and networks, in *the analysis* the data collected from the interviews are presented, first from the side of the Port, than the opinion of the partners is shown too. In the conclusion it is possible to see if a knowledge creating network is present in the local area, and what the potentials are for sustainable solutions.

IV. Table of contents

1. Introduction

In the introduction part I would like to guide the reader from the original ideas and concepts of my thesis, through the literatures that influenced my focus, to have a better understanding of how I developed my research question. Environmental issues have been in the middle of focus for the last few decades now. Words like *sustainability* are not new buzz-words anymore, it has become a key focus for EU policies, an aspect companies have to consider in their business plans and it is even the core of social discussions. Awareness of *environmental problems* and *solutions* is continually changing as a result of insufficiency of the former methods and in recognition of new problems and possibilities. The transformations in a world of enlarging environmental anxiety, social inequities, the lack of food and clear water, climate and economic crises create new *challenges and responsibilities for business, authorities* and civil society in the mission for sustainable management of resources, and the utilization of goods and services (Lehmann, 2011; Remmen, 2004).

Reading through several literatures on environmental issues and sustainable solutions it came forward that most problems can be traced back to the operation of companies and certain industries. It is often said that the Earth is suffering from the irresponsible behaviour of humans. To be more accurate and it could be said instead that it suffers from the irresponsible operation of companies run by humans. Globalization is associated with the word "growing"; growing companies, production, profit even growing consumption and it naturally leads to growing pollution, growing issues to face. As problems, environmental *policies* have also gone through a lot of changes in the last two decades. At an early stage command and control policies were common tools for dealing with environmental issues, mainly focused on resource use and emissions from the production process like smoke, waste and noise. Whereas now a more *market oriented policy* is observed, rather decentralized and informal negotiations, *new economic approaches* and instruments take command. Environmental awareness has gradually been increased to cover entire production systems and the product life cycle. *The question is how firms, governments and other organisations can encourage sustainable development in an economically and socially effective way*. In Denmark, regulatory institutions like the Danish Environmental Protection Agency (DEPA) have focused on improving the environmental performance of the industry; moreover have supported the building of a *knowledge network* involving consultants, universities, NGOs etc. The institutional set-up has improved the conditions for *environmental innovations* of cleaner processes and products in the firms (Lehmann, 2011; Remmen, 2004).

To conclude it can be said that companies are *often the cause of environmental problems and at the same time the key to solutions as well.* Sharing knowledge, using new solutions, investing in common innovation with other companies, choosing partners that are equally aware of their responsibilities are actions that companies can do to make a difference. *Networking and collaborating with their partners, suppliers, and buyers increases the chance to change the inefficient ways of operating. Based on the literature it is assumed, that where physical and relational proximity is given, a knowledge sharing area is created that may contribute to sustainable solutions.*

The case study of the Port of Aalborg is used to understand how networking activities have a potential for sustainable solutions. It is chosen for three reasons; it is an interesting intersection between industries and countries, it participates actively in networking and its

main aim is to strengthen cooperation. Aalborg has two main industries in its area; one is the wind power industry with huge cooperations like Siemens or Bladt Industries. The other main industry of the city is logistics and transportation to Greenland and other countries worldwide. The Port of Aalborg is connected to both as it rents out territories to most of the wind power industry here and all the goods shipped to Greenland go through their harbour. The Port is also engaged in various network activities, it is a member of Artic Business Network, CELOG, HubNorth and Business Network 9220 (Port of Aalborg, 2012).

Using *networking theory*, 3 main independent elements (actors, activities, resources) are taken into consideration to identify the quality of relationships. *Actors* are the first ones, and they represent the *social bonds* between two companies. In the interviews, questions are made to understand if the workers have a close, regular contact, or e.g. their CEOs have a good relationship. It makes *collaboration rather easier, when the workers or chiefs know each other well, as it helps to raise the trust and the engagement in new common activities*. If one of the leaders of the companies is committed to sustainable solution, it can influence to closest partners to follow them in their agenda. It can happen *though informal discussions*, or e.g. one company decides to only buy from environmentally friendly suppliers. From the interviews it can be clarified if close relationships - between the actors in companies - contribute to sustainable commitment or not. *Activities* are the second aspect, trying to clarify what firms actually do together. Activities can be various, from providing advisory services, through renting territories, to shipping products etc. Common activities can be the source of sustainable operation, e.g. if the two companies decide that they would like to reduce their CO_2 emissions by using less energy when operating together. The third aspect is *resources*. When the mutual trust is high and the business aims are similar, two companies might invest in resources that could be used for activates. It can vary from human resources, e.g. a shared PhD student, to financial ones (Håkansson and Snehota, 1995).

Qualitative interviews are used as tool to gather information about actor bonds, activity links and resource ties. First the Port of Aalborg is interviewed, then using snowballing technique; their most important partners - mentioned during the interview - are also visited for a second round of interviews. The analysis shows a deep examination of the interviews, the results are shown at the end of the chapter.

2. Literature review

In the literature review I would like to summarize the many articles and books that I have read in connection to networks to show what have shaped my interest and focus. It is not possible to list all the material, but I would like to present the findings of one book that encompasses the knowledge of many authors and 6 additional articles that in my opinion have the best summary of the topic. I have not found a case study that aims to research the same topic, using the networking theory, thus I cannot show a comparison to this thesis.

In the rest of the thesis, networking is in the focus, but I would like to make it clear how networking and sustainability can occur together in a company. Various articles are published about the connection among *sustainability, innovation and networking*, nevertheless I would like to emphasis one particular article published in Harvard Business Review in 2009 as it has interesting input for this thesis. As it was discussed in the introduction, companies can contribute to sustainable solutions not only e.g. by cutting their emissions and following quotas, but also with common innovations, networks of knowledge, working on new more environmentally friendly solutions. This article gives some more examples how companies could contribute to sustainable solutions.

Nidumolu, et al. (2009) divided the changes companies go through - when trying to become more sustainable - into 4 stages. Each stages emphasis *competencies* that are mostly connected to networking and collaborating with other companies, and *innovation opportunities*, that can be a result of successful collaborations and knowledge sharing (see table 2).

Table 2. Sustainability competencies and opportunities

STAGE 1	**STAGE 2**	**STAGE 3**	**STAGE 4**
Viewing Compliance as an opportunity.	Making Value Chains Sustainable.	Designing Sustainable Products and Services.	Developing New Business Models.
COMPETENCIES NEEDED	COMPETENCIES NEEDED	COMPETENCIES NEEDED	COMPETENCIES NEEDED
The skill to work with other companies, including rivals, to implement creative solutions.	The capacity to ensure that suppliers and retailers make their operations eco-friendly.	The management knowhow to scale both supplies of green materials and the manufacture of products.	The ability to understand how partners can enhance the value of offerings.
INNOVATION OPPORTUNITY	INNOVATION OPPORTUNITIES	INNOVATION OPPORTUNITIES	INNOVATION OPPORTUNITIES
Using compliance to induce its partners to experiment with sustainable technologies, materials, and processes.	Developing sustainable sources of raw materials and components.	Applying techniques such as biomimicry in product development.	Developing new delivery technologies that change value-chain relationships in significant ways.
	Increasing the use of clean energy sources such as wind and solar power.	Developing compact and eco-friendly packaging.	Creating monetization models that relate to services rather than products.
	Finding innovative uses for returned products.		Devising business models that combine digital and physical infrastructures.

Source: R. Nidumolu et al (2009)

The first stage suggest seeking collaboration with other companies, even rivals to share knowledge, and use networking to encourage the company itself and its partners to experiment with sustainable technologies, materials, and processes. The second stage goes further and aims to make the value chains sustainable. Now they use their connections and networks that they built in the first stage and try to ensure that suppliers and retailers make their operations eco-friendly. Innovation opportunities are focused around sustainable sources and increasing the use of renewable energy. In the third stage they narrow down their focus to the products and services. It is an opportunity to use the knowledge gained through their networking activities in order to apply techniques such as biomimicry in product development, or develop eco-friendly packaging. In the final, *fourth stage* the aim is to understand how partners can enhance the value of offerings, and use this knowledge to develop a new business model. Each stage has its opportunities to innovate, engage in some collaboration with other companies or work with suppliers and help the enterprise become "greener". As the stages change focus from learning and focusing on problem solving is more on system approach and holistic solutions that include the whole value chain. The collaboration with other partners start out from negotiations, and discussions with other companies, and in the last stage brings up the challenge to engage our partners in sustainable solutions (Nidumolu, et al., 2009). Based on the article, *it can be assumed that actively participating in networking and collaborating with other companies, have the potential to use the knowledge and the network to engage in sustainable innovations and new solutions.* In the problem formulation chapter the research question is party built upon this assumption.

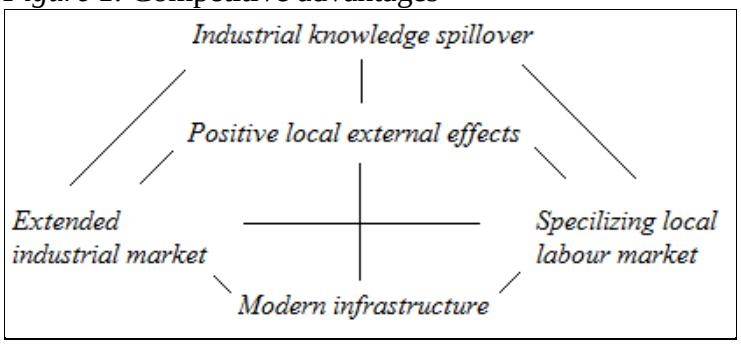
A short summary is following about the *nature of collaboration* among companies to understand *how* collaborations emerge, what their *binding power* is, how they *create knowledge sharing*, and what the conditions for achieving such a network are, where sustainable solutions are the aims of the companies. Collaboration between companies is originally motivated by business interest; companies have more advantages when collaborating than being left outside of a network. There is plenty of *reason* for these networks to evolve. *Maximizing profit* is an obvious interest, but there are other important advantages as well. Firms can *save costs*, based on the common usage of certain tools or services (law, accounting, tax, marketing, information technology), or *widen their boundaries of resources*. Although today with the help of the internet keeping in touch is not an issue anymore, even for large distances, still for *developing relationships* geographic concentration is an important condition. If collaborating firms have good relationship among the workers and chiefs, they can defend themselves better against market threats with e.g. common strategies (Lengyel, 2006).

There are various types of business networks, one interesting for this thesis is called *regional/local business network*, which appears in regional/local levels where firms use the advantage of agglomeration[1]. A short description is coming on the advantages to understand better why companies tend to collaborate and engage in networking activities (Lengyel, 2006). The *advantages of agglomeration* became well known through the work of Alfred Marshall. In 1920 Alfred Marshall made a distinction *between internal and external economies of scale*. *Internal* is when the costs are dependent on factors coming from *inside* the company e.g. the size of the factory, the management, the type of organization. *External* economies of scale occur *outside* of a firm, within an industry. Thus, when an industry's scope

[1] „The association of productive activities in close proximity to one another. Agglomeration typically gives rise to external economies associated with the collective use of infrastructure of transportation, communication facilities and other services. (Johnston at al 2000)

of operations expands due to the creation of a better transportation network, resulting in a subsequent decrease in cost for a company working within that industry, external economies of scale are said to have been achieved. The concrete manifestations of the external economies of scale are: the *externalities*. These positive externalities help the concentration of businesses and their success because they provide the chance to reduce the costs of transportation and transactions and create an atmosphere where information and best business experiences can be exchanged more effectively. Marshall said the spatial concentration of the industries starts a self-reinforcing process. Where there are positive externalities, modern infrastructure and many companies gather in a local area, they improve the quality of labour market, industrial market and all together contribute to a knowledge spillover (see fig. 1). Three main advantages can be mentioned regarding the concentration of an industry (Lengyel, 2006).

Figure 1. Competitive advantages



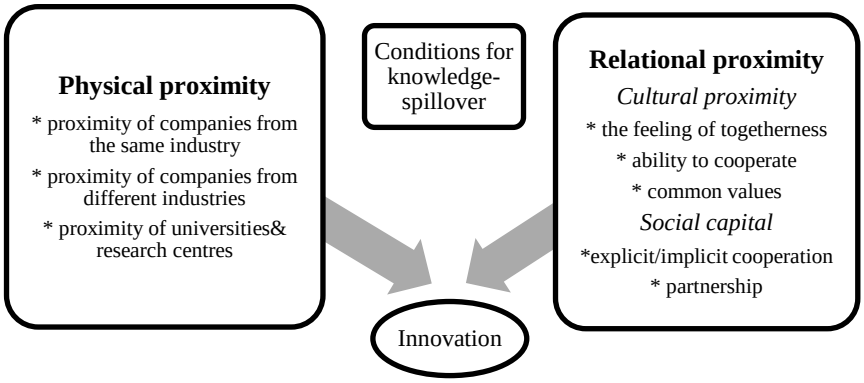
Source: I. Lengyel and J. Rechnitzer (2004)

The *intensity of a labour pool* is one of great advantage due to the geographical concentration of firms in the same industry or in closely related ones. As there is demand for similarly educated workforce, the education system follows the demand, and a specialized circle of experts can be found in the area. The second advantage is the availability of a *great industrial market* what leads to the specialization of local suppliers and services. What is more interesting for this thesis is the last advantage; the *knowledge spillover*, which makes it possible for firms to exchange the information, innovation, knowledge and knowhow fast among each other. With these three advantages (the existence of modern infrastructure is a given condition) it is possible to achieve *positive local effects* (Fallah and Ibrahim, 2004).

An agglomeration economy is called *industrial district* when besides the geographical concentration, the *organizational and cultural proximity* is observed. It is the *culture of cooperation and social capital that allows companies to collaborate,* stand up together against threats and develop successful ways of working together. When the concentrated companies and their employees are able to use the appropriate technologies, to share this knowledge with each other, to collaborate, then it's possible to have an *industrial district based on collective learning.* If they manage to exploit this collective learning, we can talk about an *innovative milieu*, which is basically a knowledge creating local area (Lengyel, 2006).

Capello and Faggian (2005) were studying the *existence of innovation milieus*, and the reasons behind their development. They divided the conditions into *physical* and *relational proximity (see fig. 2)*. Geographical or regional sciences conventionally use the concept of proximity, defined as short geographical distance signified as spatial, local or physical.

Figure 2: The role of physical and relational proximity in the evolution of innovation milieu



Source: Capello and Faggian (2005, 79)

Short distance brings the individuals closer, helps information transfer and facilitates the exchange of knowledge, particularly tacit knowledge (Lengyel and Mozsár, 2002). The knowledge spill-over generates positive externalities, and knowledge increases the productivity of research and development activities. Empirical studies show that *companies close to knowledge sources (tacit or codified knowledge) can have better innovative performance* than firms located elsewhere (Boschma, 2005).

Proximity does not only mean geographical closeness, it can also refer to relational closeness. *Relational proximity* is the ability of an organization to make its members interact. They differentiated cultural proximity and social capital. In the relational space the cultural closeness, the feeling of togetherness, the ability to cooperate, and common values of the economic and institutional actors are needed for the fusion of knowledge. This cultural closeness allows the recruitment of the social capital, the exchange of the explicit or implicit knowledge, the partnerships between the public and private sectors (Capello and Faggian, 2005).

The *relational proximity plays an important role in the analysis of this thesis, as the aim is to see how business relationships and the quality of these collaborations contribute to sustainability*, thus a deeper description is shown of the types of this proximity.

In the following part a slightly different categorization is shown based on the research of Boschma (2005), where relational proximity is identified in 4 ways, as *cognitive*, *organizational*, *institutional* and *social*. In the empirical research of this thesis, during the interview I seek to understand the relational proximity of the chosen companies, asking questions that are supposed to measure the following parameters of proximity. The organization helps the interactions among employees inside the company and with other actors outside the organization. The researchers of the "Dynamics of Proximity" group use the notion of relational proximity in a wider sense. They identify *cognitive*, *organizational*, *institutional* and *social* proximity under relational proximity;

- Actors in *cognitive* proximity have similar knowledge base, thus they transfer knowledge and communicate with each other more effectively.
- The notion of *organizational* proximity means relations in the same space either within or between organizations, and refers to the similarity between individuals sharing the same reference space and knowledge.
- Actors are in *institutional* proximity, because they pertain to one institutional framework at macro-level. Relations and interactions between actors and group of actors are regulated by a set of rules and laws (formal institutional framework) and common habits, routines, (business) practices (informal institutional framework).
- *Social* proximity can be defined in terms of relationship between actors at the micro level embedded in the same social context. Actors share trust based on friendship, kinship and experience. If business relations (within an organization) are more socially embedded, the possibility of a better innovative performance is available (Boschma, 2005).

The main concept from this chapter that I further build upon is the *relational proximity*. It became clear that geographical closeness is not enough for companies to engage in collaboration and close business relationship, relational proximity is an important condition as well. Since the companies and networks that I investigate in this thesis are all located Aalborg, and relatively close to each other in the geographical sense – many of them are to be found in the territory of the Port of Aalborg - this concept is considered a given condition, thus will not be further discussed. The *relational proximity is the most important concept of this thesis*, and with the help of the theory, I use interviews to collect relevant information from the local firms about their relational proximity, to see how it contributes to sustainable solutions.

3. Problem formulation

In this chapter I would like to show the reader how I perceived the initial problem of this thesis, for which I am seeking to find an answer though the analysis (see fig. 3). Global environmental issues are in the middle of my interest and thus my intention is to search for new and innovative solutions for problems that have not yet been successfully solved. The literature shows that new approaches are observed in environmental policies, especially since the publication of the Brundtland report. *Companies came in the middle of focus* regarding environmental issues, since the corporations are the most powerful actors today's economy, some companies make such incredible amount of incomes that are higher than the yearly GPDs of a dozen of countries. Also The United Nations Environment Program (UNEP) acknowledged the impact of companies when in 2002 they released a report saying that, "there was a growing gap between the efforts to reduce the impact of business and industry on nature and the worsening state of the planet" and that "this gap is due to the fact that only a small number of companies in each industry are actively integrating social and environmental factors into business decisions" (Shah, 2002).

It is difficult to find a way to approach these companies and involve them in sustainable planning and make them understand the importance of environmental issues, since it is not their original goal to achieve. But companies can also be positive instruments for the environment as *they normally have a great deal of capital, knowledge, and resources* to research, innovate, develop environmentally friendly/sustainable products (Shah, 2002).

The question is how to engage them to use their power for the sake of the environment? In Europe, three policies are well known:

- Command and control instruments: most known as quotas, rules, boundaries, limitations
- Economic instruments: deposits, subsidies, liabilities, levies
- *Voluntary instruments*: information, provisions, collective agreements, environmental management systems, audit, report, networking.

The ENVIS[2] project stated that environmental-oriented behaviour is reliant on the combination of pressure, economic opportunity and internalised values. But what is more interesting is that they suggest that if companies want to adopt new technologies they need the collaboration of various third parties. This is due to the fact that for new technologies, the opportunities offered by the network of relevant actors and the chance to involve those actors are essential (Dijken, et al., 1999).

As mentioned in the introduction before, policies are changing from the command and control ones and new, more informal, market oriented approaches replace them. I think it is important to emphasise that this new approach combines the business and environmental aims as well. From the *environmental point* of view there is need for new innovative solutions, knowledge sharing among companies and actors to exchange the insufficient former methods and make space for new sustainable solutions. *From the company point of view*, collaboration,

[2] The Government of India, in December, 1982, established an Environmental Information System (ENVIS) as a plan programme, providing environmental information to decision makers, policy planners, scientists and engineers, research workers, etc.

networking, building business relationships and sharing knowledge has various advantages that make them interested in participating (detailed before in picture 1). They need networking, and knowledge sharing to come up with new inventions, and this is both a business and environmental aim. *This is one of the reasons why in thesis knowledge sharing, collaboration and networking activities of companies will be further investigated*.

To investigate networking, the Port of Aalborg is chosen as *the case study* of this thesis. When reading about the industry of Aalborg and the main companies in the area, I developed a special interest for the Port of Aalborg as it is an interesting case for networking for its business and infrastructure as well. First of all, to understand how the networking of the Port could help to solve some environmental problems, it is interesting to see what problems the company is facing. Transportation and industry are the two main contributors to pollution and environmental issues and both can be connected to the Port of Aalborg. Transportation is easy to see since the port traditionally is a logistic centre, a hub for transportation. Countless cargos and containers go through the harbour and get transported to Greenland and everywhere else in the world. On the other hand, The Port of Aalborg Ltd. owns more than 3 million square meters of well-placed harbour real estate, especially at the East side of Aalborg. All areas are approved for harbour and transport activities, thus mostly industrial companies are to be found there. Companies like Carlseberg, Weber, Royal Arctic Logistics and Siemens Wind Power rent territories from the Port of Aalborg (Port of Aalborg, 2012). Industrial companies and their facilities often have an elevated level of pollution, electricity consumption and many other side effects of their operation.

Besides being an interesting case from the environmental point of view, to investigate networking, it only makes sense to choose a case where the company is included in active networks and has many business partners. The Port is suitable for this condition as well, since besides being close to the companies on their lands, the Port also tries to contribute to networks that strengthen the tie between North Jutland and Greenland, as well as local business networks.

Here I would like to reach back to the literature review where based on the article of Nidumolu, et al., (2009) where it is assumed that *actively participating in networking and collaborating with other companies, have the potential to use the knowledge and the network to engage in sustainable innovations and new solutions.* I assume that in Aalborg where the harbour plays a key role in networking, and it is an intersection between industries, between North Jutland and Greenland, where the key aim of most of the companies and networks is knowledge sharing, sustainable solutions can come alive through networking. Based on this assumption and the rest of the literature review the following research question is formulated:

How can the networking activities of the Port of Aalborg have potentials for sustainable solutions?

To answer the research question, interviews are conducted with the Port of Aalborg, then with its partners to understand the quality and the potential of these business relationships. In the next chapters I present the methods and the theories I use to answer the research question and see if my assumption - that *the networking activities of the Port of Aalborg can contribute to sustainable solutions* - is true.

4. Methodology

Researchers more and more use a theoretical lens in qualitative research, which provides an overall positioning lens for the study of questions behaviour and attitudes "how" or "why". This lens becomes a supporting perspective that shapes the types of questions asked, informs how data are gathered and analysed. A revolution occurred in qualitative research in the 1980s to broaden its scope of investigation and include these theoretical lenses. The theory guides the researchers as to what issues are important to examine and the people that need to be studied. They also specify how the academic positions himself or herself in the qualitative study and how the final conclusions need to be written. In this thesis a theoretical lens is used as well to guide how data is collected, knowledge is perceived and conclusions are drawn (Creswell, 2009).

As mentioned in the problem formulation chapter, the aim is to analyse how companies collaborate, and how it can contribute to sustainable solutions. To answer the research question, first various literatures, articles, publication and materials were selected, processed and summarized in the first two chapters regarding networking, collaboration, sustainable networking and innovation. Based on these materials, an assumption is made, that *when a close collaboration, and networking among companies is achieved, sustainable solutions might occur due to their interactions*. Party based on this assumption the rest of the literature review the following research question is formulated:

How can the networking activities of the Port of Aalborg have potentials for sustainable solutions?

More theories are used to answer the research question. Using the mixed theories I chose the elements from each that fit the best the research questions. *Continuity, complexity, symmetry, informality, openness, support, proximity and trust* are some of the aspects that help to analyse the business relationships among the actors. These aspects can only be measured by qualitative methods; they cannot be measured by numbers and quantitative tools. The best tools to gather data in this case is the *interview*. When deciding the details about the interviews the theory helps to narrow down the area. It suggests the data should not e.g. be about the maritime sector, or about the whole wind power industry, it rather recommends to focus on single chosen companies in a local area. To what the actors actually do together, how they communicate, what they want, how they see each other qualitative methods are needed.
The analysis investigates the network quality among the companies and in order to do so expert opinion is used as a tool. *I consider experts the representatives of the companies I conduct interviews with.*

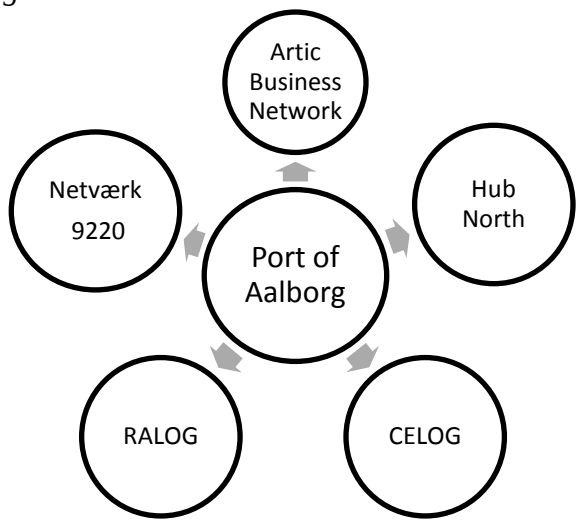
The delamination of the thesis has to be mentioned as well. With more time it could have been possible to make a quantitative research as well, and map all the connections of the Port of Aalborg and its related business partners. It would be an exciting project to create a map of all the local connection starting from the harbour, and see what role it plays in local networks and clusters. Accessibility of the companies was an issue as well, some of them were hard to reach; Siemens and Bladt Industries did not provide any opportunities to talk to them. Sustainability as an aspect is not discussed very deep either, it could have been interesting to gain deeper knowledge of the possible sustainable innovations and how they occur in a

company. Nevertheless 16 interviews were conducted, to provide a deep insight into the networking activity of the Port of Aalborg with its closest partners.

The first interview was with the Port of Aalborg, and data was gathered about their most important business partners, focusing on the quality of their relationship and links to sustainability. The harbour mentioned four companies (Siemens, Bladt Industries, CELOG, RALOG) and three networks (Hub North, Artic Business Network, Netværk 9220) as their closest partners. Unfortunately it was only possible to conduct interviews with two companies and the three networks (Siemens and Bladt Industries were not available).

Using the snowballing technique a second round of interviews was conducted with these mentioned partners. To see the symmetry, first the harbour and then all the companies were visited and interviewed about how they see their relationship towards each other (see fig. 3).

Figure 3. Data collection - interviews



Source: own design

Like the other qualitative methods, expert opinion gathered from interviews and focus groups is a very attractive method as it can make up for the challenges in the qualitative analysis of secondary data. Expert opinion can add a fresh and maybe completely different perspective, asking local actors what they see as dominant or vital can reinforce the results of the quantitative analysis. This method has the advantages of receiving very rich, detailed information in and easy, low cost way. Semi-structured interviews are conducted with the experts; in order to encourage two-way communication, understand the reasons behind the answers, and to leave space for new questions. I use open questions which allow respondents to include more information, including feelings, attitudes and understanding of the subject. In the analysis part all the information presented (if not referenced otherwise) is gathered through the interviews.

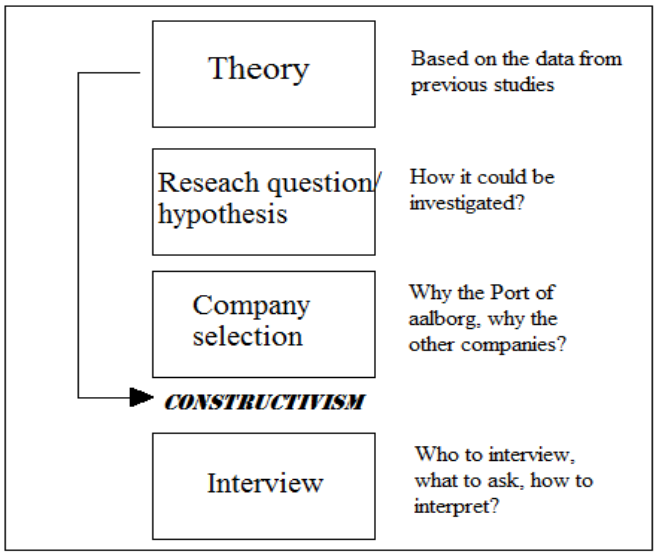
The pitfalls of this method are the difficulty to generalize the information and the fact that the information gained through the interview is "just an opinion". Another bias is - a very common phenomenon when interviewing companies – the modification of the truth. As I present myself for my interviewee and introduce a little about the topic, which we shall discuss, I unintentionally draw the others attention of what I expect to hear. Companies naturally try to be seen in a good light, thus the answers might be modified to create a better image for them (Creswell, 2009).

And how do I see generating of knowledge in this case? In this theory interpretative approach and constructivism within epistemology is used. In its most extreme form, interpretive research opposes that reality is constructed and that no universal truth exists. More exactly, interpretivism proclaims that multiple truths exist, as conceived by individuals' unique perceptions on the world. Interpretive research lightens individuals' perspectives and experiences. In interpretive approaches, truth is best understood through research conducted in natural settings where the researcher is close to the research participant, and through critical subjectivity and inductive reasoning. Interpretive approaches emphasize thick description, and utilize the researcher as the chief instrument in data gathering and analysis. The strengths of interpretive research include a strong understanding of context, rich detail, and flexibility to address emerging issues. Interpretive research is commonly considered to be well suited for exploratory research, especially uncovering the "how" and "why" of phenomenon (Betzner, 2008). One of the advantages of this approach is the close collaboration between the researcher and the participant, while enabling participants to tell their stories. Through these stories the participants are able to describe their views of reality and this enables the researcher to better understand the participants' actions (Baxter and Jack, 2008).

As the thesis is seeking to find answers for "why" and "how" questions, it uses a case study of the Port of Aalborg. In this case study, a deeper description and analysis is provided about the Port of Aalborg and its business relationships, but the information gained and the conclusions only reflect this case. The aim is not to find out if in general networking activities contribute to sustainability, but to see how it happens in the case of the Port of Aalborg.

I use the literature to come up with assumptions and a research question, the theory the show how the question could be answered. The theory suggest a qualitative approach, where a case study is used to show the boundaries and the focus of the thesis, and interviews are the tools for gathering data (see fig. 4).

Figure 4. Research design



Source: own design

Accepting multiple truth and the fact that no real objective opinions can be gather from interviews, is important as when the representatives of the companies are interviewed, they tell their own opinion, their own vision, thus none of the answers regarding the Port of

Aalborg or the connected companies can be generalized. All the findings of this thesis are only true in this given time and place; this truth cannot be projected to other harbours or companies in general. The interviews help to recognize the similarities and the differences from the idea I expected from the theory; namely if networking contributes to sustainable solutions (Baxter and Jack, 2008).

The theory also helps to decide which companies to interview, where to start, how to choose the other relevant companies. It was an important aspect that the company should be part of a network already or have many business partners, as alone standing firms do not provide any useful information. Choosing the right interviewees for the analysis was a difficult task not only because many employees were busy and did not have time, but also because not anybody fits for the task. The questions during the interview were regarding sustainability, collaboration, partnerships and networking, so the appropriate interviewee had to be competent in these fields (Baxter and Jack, 2008).

5. Theory

The theoretical framework is based on literature to develop the framework for understanding how an organization like the harbour and connected companies could contribute to sustainable solutions by creating activities and networks in the local area. Based on the literature, two theories are used to guide the analysis, one is the work of Håkansson and Snehota from 1995 and the other is the work of Bradbury-Huang et al. from 2010. Although they both have a different approaches, in my opinion they complete each other very well. Some parts of both theories were taken and melted together to have an overall theory that guides this thesis.

First the theory of Håkansson and Snehota is presented. The research aim of their book was about *how the intercompany relationships can be described, analysed and explained*. To be able to develop a *conceptual framework* for analysis of business relationships they adopt a *`network approach'*; where they view relationships as part of a broader network structure, rather than as isolated entities. The network approach is a really broad and complex framework, thus only the related parts are discussed here, that I use to answer my own research question.

The existence and the role of relationships between companies have received growing attention and various studies have been carried out in Europe, in the US and in Japan. They show some interesting common traits, as they generally point to a few features of business relationships.
"There is that we would call `structural', that is, how the relationships are in terms of importance to companies, age and so on. They also provide some interesting indications about what we might call `process' features of relationships, that is, about the nature of the interaction processes within the relationships, how they develop and decay, and what effects they have on the parties involved" (Håkansson and Snehota 1995, p. 6)

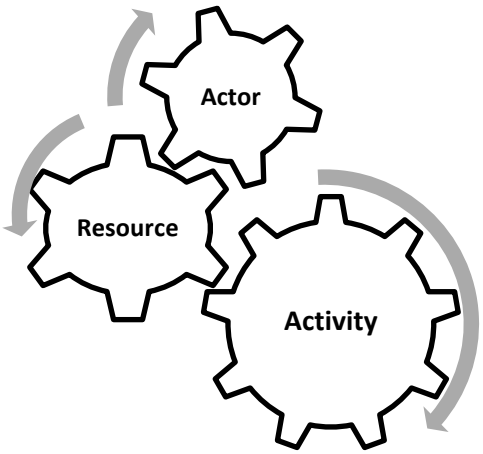
The structural characteristics are often characterized by *continuity, complexity, symmetry* and *informality*. *Continuity* plays an essential role in business relationships, as from only a limited involvement of the parties by time a very tight, comprehensive and informal relationship can be observed. There are some indications that the age of the relationship is a precondition for the continuity of change and development. Business relationships are *complex* in numerous ways; the number, type and the contact pattern of individuals involved in the relationships are different in each case. The status, organizational roles and personal backgrounds of the contact persons can also show a wide variety. *Symmetry* is another interesting feature since the partners in a business relationship are likely to have balanced resources and competencies. It defines well the relationship how the two parties have their share in resources (human, knowledge, financial, technological) and initiatives. The fourth aspect of investigating a business relationship is the level of *informality* among the companies. Informal relationships, some of which are highly related to the age of cooperation as they build on past experience, have been underlined in several the studies to be more successful regarding the development of relationships than formal arrangements (Håkansson and Snehota, 1995).

Research on the interaction processes within business relationships has pointed out a few process characteristics e.g. *social interaction* and *routinization*. Regarding *social interactions*, it is concluded that even though business relationships are essentially about business-specific behaviours, the personal bonds always play an important role in formation of a relationship.

Trust emerges as one of the significant factors influencing the interaction in business relationships. *Routinization* suggests that routines, explicit and implied rules of behaviour, and rituals in conduct emerge in the most important relationships (Håkansson and Snehota, 1995).

Taking into account some of these features the conceptual framework for the analysis for business relationships suggests three different layers of substance; activities, resources and actors (see fig. 5).

Figure 5. The three elements of networking theory



Source: Hatteland (2010, p. 65)

Three different layers of substance can be recognised in a business relationship.
First, there is an *activity* layer. A relationship is built up of activities that connect several internal activities of the two companies. A relationship links activities and obviously the activity links affect the outcomes of the relationship as well. Activity links can be technical, administrative, commercial and other. When two companies start up a relationship, some of their technical, administrative or commercial activities can become linked to each other. A business relationship develops as a flow of exchange episodes in which some activities are undertaken by one of the companies (Håkansson and Snehota, 1995).

Second, there is a *resource* layer. A relationship between two companies has effects on the way the companies are utilizing resources. As a relationship progresses, it can bond various resource elements needed and controlled by two companies. A relationship can link together resources. As a relationship creates numerous resource elements accessible for the companies and it also establishes a resource that can be used and exploited. Resource ties connect several resource elements (technological, material, knowledge resources and other intangibles) of two parties. Besides the tangible resources, various intangible, often vaguely defined, resources such as technical, commercial or administrative know-how can be of interest. Resource ties are good indicators as they result from how the relationship has developed (Håkansson and Snehota, 1995).

Third, there is an *actor* layer. A relationship between two companies affects them in a similar way to that between two persons. Bonds between two actors may change their way of seeing and interpreting situations. Being seen as a `close friend' to a company, helps in other relationships. Bonds arise in a relationship between two companies when they pay a certain amount of attention and interest towards each other. These bonds can make the companies

mutually committed. Actor bonds affect what the parties know about each other and what they can discuss. Bonds between actors are established which affect how the actors perceive, evaluate and treat each other (Håkansson and Snehota, 1995).

"The three layers are not independent; there is a connection among the actor bonds, activity links and resource ties. Actors carry out activities and activate resources. Activities are resource-consuming and evolve as the capabilities of actors develop. Resources limit the range of activities an actor can pursue. The existence of bonds between actors is a prerequisite for them to actively and consciously develop strong activity links and resource ties. Activity links make it likely that bonds can develop, and so on" (Håkansson and Snehota 1995, p. 35).

I would like present the findings of MIT researchers from the year 2010 as my other theory. This second theory helps to understand how the *actor bonds* could be observed. It reaches back to the literature where relational proximity was mentioned. Bradbury-Huang, et al. (2010) had a particular interest in "sustainability collaborations" such as The World Business Council for Sustainable Development (WBCSD), the Social Venture Network, and the UN Global Compact, which are composed of large, for-profit companies exploring how to transform their businesses and their societies into more sustainable systems. Faced with broad, complex issues and a wide range of member expectations, they investigated how such consortia generate agreement and identify their collaborative projects. To gain insight into such questions, the authors studied the early years of the Sustainability Consortium – a voluntary association of about a dozen corporate members interested in moving their diverse companies and industries toward greater sustainability.

At the heart of the collaborative process they identified among others relational space and action projects. "Relational Space" – a dialogical context of shared trust and learning that preceded the emergence of shared expectations or negotiated projects and supported project execution. Interviewees consistently noted what they perceived to be qualities of their Consortium relationships including "*openness," "respect," "inspiration," "support," "safety," "proximity," and "friendship."* It is observed that during common meeting of the firms listening to each other turned into understanding each other, then repeated meetings and time created trust among the partners. When trust was achieved, talking was suddenly replaced with taking actions and engaging in common activities and resources (Bradbury-Huang, et al., 2010). In their research the authors observed an organization, and tried to find out what are the key elements, that make them collaborate and engage together in sustainable solutions. This thesis investigates something similar, but from another angle. I chose the Port of Aalborg and related business partners and networks, to try to understand how they interact and what the potentials are to sustainability from their partnerships and collaborations.

From the two theories I wish to make a wish to make a framework for the analysis. Since my research questions is built upon the quality of business relationships, in the interviews conducted with the representatives of the Port of Aalborg and its partners, I build up the questions on the elements mentioned in the theory. C*ontinuity and informality, proximity, social interaction, routinization and trust* describe well the relationships between actors, whereas activities and resources are described well with information about *complexity and symmetry.* During the interviews questions are asked about all these elements, in order to have a precise and broad picture of the quality of the relationships in the network.

A summary is shown about how the interview questions are built upon the theory (see table 3).

Table 3. Theory in the interviews

Theory	**Aspects**	**Details**
Actor bonds (Continuity and informality, proximity, social interaction, routinization and trust)	Regularity of contact	How often they contact their partner? (Every day, week, month etc.) What is the purpose of the contact (only daily operations or strategic meeting, knowledge-sharing?)
	Style	How would they characterize the relationship between the two companies? Informal/formal?
	CEOs contact	Are the CEOs of the companies in good private relationship? (maybe friends from university or previous workplaces)
	Access to CEO	Is it easy and informal to talk to the CEO or is it more a formal, horizontal approach?
	Trust (1-10)[3]	How would they rate the trust between your companies?
	Willingness to cooperate (1-10)	How do they rate the willingness to cooperate?
	Willingness to share information (1-10)	How do they rate the willingness to share information?
	Common innovation	Do they work on a common innovation and if so, what would that be?
	Knowledge-sharing	Do they share your knowledge with each other and if so, how?
Activity links	Common activity	What kind of activity does the company with its partner? (e.g. research, project, students, advice, services, transportation, construction..)
Resource ties	Resource	What types of resources are linked to activities? (e.g. human, technology, financial)

Source: based on the networking theory (Håkansson and Snehota, 1995)

In the analysis to create the symmetry, it is first shown how the Port sees its connection, and then the same companies are asked how they see their relationship with the Port and other companies. The point of view of the Port is presented first, so the information from the interviews is summarized in a table, separating actors, activities and resources to give an example how information is analysed and used. I the other cases these aspects are considered inside the text, without highlighting them in a table. According to the assumption, if a close business relationship based on these three variables is observed, I am expecting to find activities or resources connected to sustainable solutions.

[3] On a scale from 1 to 10, where 1 represents the weakest and 10 the strongest end.

6. Description

In this chapter, first a deeper description is provided about the Port of Aalborg and its environmental activities, followed by a shorter description of the most important partners and networks of the harbour. After the role of the companies and networks are clear, the quality of their relationship is analysed in the next chapter.

6.1. The Port of Aalborg

The interviews are conducted with the following persons:

- Lise-Lotte Terp (head of secretariat, also a chairman in Artic Business Network)
- Mette Schmidt (technical manager in the infrastructure & the environment department and also chairman in Netværk 9220)
- Brian Rasmussen (civil engineer in the infrastructure & the environment department and also coordinator of the energy & environmental focus group in Netværk 9220)
- Jesper Skatka (Sales & Marketing department)
- Stine Bylin Bundgaard (PhD student)
- Ole Brøndum (sales- and marketing manager)

The Port of Aalborg has been established at the end of the 1400s and since situated in the east part of Aalborg. It is more than a traditional harbour; it keeps track of calling ships, handling all types of cargo through multi modal transport solutions at sea, land and in the air. It can solve logistics and transportation to and from North Jutland and the rest of the world. Although the Port owns 280 hectares land designated for industrial use, the Port of Aalborg as a company has only approx. 60 employees. The staff is qualified to handle the various services which the port offers and which the customers and cooperation partners expect. The port emphasises two skills when describing the company, their expertise in logistics and cooperation. The Port of Aalborg is a transportation hub in North Jutland, thus it is their primary objective to provide a good service in logistical solutions. From the docks of the harbour it is possible and easy to have cargo delivered to and from the rest of the world. To strengthen their position it connected their port to the global transportation network through the feeder route Rotterdam-Aalborg-Gothenburg (The Port of Aalborg, 2012).

Regarding cooperation, they offer some of best real estate for rent in North Jutland. The areas are close to the infrastructure - sea, land and air and big enough to have the space available to companies that need large areas for production or storage or even expansion (see fig 6).

Figure 6. The available areas at the Port of Aalborg harbour territory

Source: Port of Aalborg (2012)

The harbour do not only rents out territories, but offers to provide service to those companies that has a need for a new administration building or a new warehouse, let it be building real estates, cleaning and cafeteria-services. The Port takes advantage of economic advantages in large scale operations (The Port of Aalborg, 2012).

Besides being close to the companies on their lands, they try to contribute to networks that strengthen the bond between North Jutland and Greenland, as well as local business networks. The harbour is actively participating in networks like HubNorth, Artic Business Network (ABN), Centre of Logistics (CELOG) and ErhvevsNetværk 9220. The harbours vision is to become a leading port in Denmark with focus on being an intelligent port, where cooperation, network and transport- and logistic solutions are the driving factors. "The Port of Aalborg also takes part in developing environmentally friendly transport solutions and transport facilities, in cooperation with the local community and other businesses (The Port of Aalborg, 2012).

Regarding the future, it is a key aim to become "Denmark's intelligent port", meaning that it does not only fulfil the traditional tasks of a harbour but also encourages networking and developing new solutions. Attending many international maritime conferences it became clear for them, that they might never be the biggest port, but instead they are willing to become the smartest. Their core business lies in logistics, which goes far beyond transportation only and welcomes new innovative technologies that contribute to sustainability. Being the first to become more sustainable and gain knowledge about innovative solutions, the port is likely in the future to attract more and more companies that would like to exploit not just the transportation advantages of the port but would also like to participate in knowledge sharing.

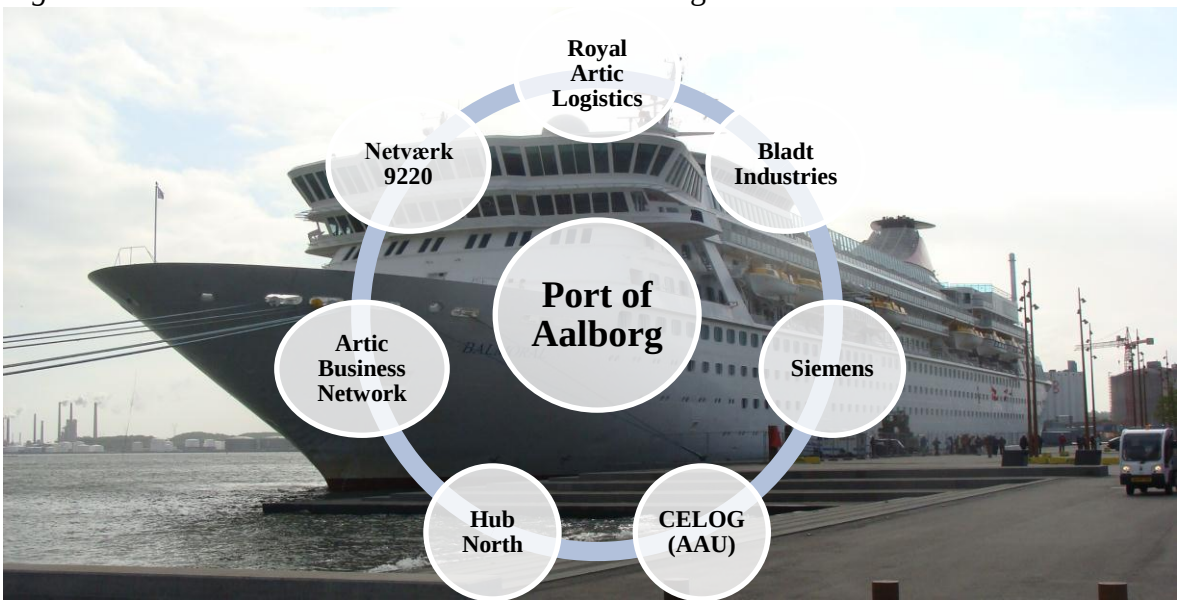
Since environmental problems are becoming more pressuring for companies, especially to those ones that operate heavy industry, it is also a business interest to become more efficient and get in advance compare to other ports. One of the most important challenges for the Port of Aalborg is to reduce their CO_2 consumption. Since the Port is in a private area where they have to take care of their own lighting of the roads and the Port operates 24/7, lighting is a main contributor to the Port's electricity consumption. Although there are attempts to shut down the lights on the roads when they are out of usage, crime is also a factor to be taken to consideration. There are many exceptionally expensive blades and machinery on the area of the Port, light is important part of keeping them safe from intruders. Given these circumstances, they are working together with their light suppliers to improve LED solutions. LED technology would allow them to reduce their consumption by 75-80% and it only has 4-5 years of payback time. It is on one hand a great environmental success, since they save the energy equal to what 10-15 households would consume in a year, but also it saves a great deal of costs for the company. The Port also considers investing in solar panels for the top of their buildings, but this is a very expensive solution and the payback time can be even 20-25 years. The final and best solution would be to produce their own energy in the future. Siemens Wind Power was considering setting up a windmill as a "show-piece" for their costumers at the Port but since Siemens produces huge windmills, setting up has many restrictions and is not suitable for this area.

It can be concluded that sustainable solutions were so far more an internal then and external aspect for the Port. Their aim is to start dealing with environmental problems first inside the company to set a good example for sustainable operations and solutions, and later distribute this knowledge to all the companies and partners in the area. When thinking about all the connections the Port has, including sustainability in their business networks could have the potential for bigger changes.

6.2. Partners

In the interview with the Port of Aalborg, they named their most important partners. These partners do not represent all the business relationships the harbour has, but they appear to be the most important ones based on the interviews. The partners are separated based on their forms, thus companies and networks are discussed separately. Royal Artic Logistics (RALOG), Bladt Industries and Siemens are the closest business partners of the Port of Aalborg. HubNorth, Artic Business Network (ABN), Centre of Logistics (CELOG) and Netværk 9220 are their most important networks and close alliances in innovation and knowledge transfer (see fig. 7). In this subchapter a short overview of these companies and networks is presented.

Figure 7. Partners and networks of the Port of Aalborg



Source: based on the interview

6.2.1. Companies

Royal Artic Logistics is the general agent of the Royal Arctic Line in Denmark, located in Aalborg East, on the territory of the Port of Aalborg. Terminal and warehousing and forwarding are their main activities. They operate freight-forwarding and scheduled service agency in Aalborg. Annually more than 85,000 shipments are booked and coordinated here. Royal Arctic Logistics also runs stevedoring in Aalborg; therefore the local Greenland base is in charge of the practical handling of goods, including being forwarded to or from Greenland. In general Royal Arctic Logistics offers multiple services in stevedoring, container management, warehousing and goods handling. (Royal Artic Logistics A/S, 2011)

"*Bladt Industries* is an international steel contractor specializing in large-scale and highly complex steel structures, located also in the territory of the Port of Aalborg. They operate in three key areas of business providing steel solutions for the wind and renewable energy sector, for the oil and gas industry and for infrastructural projects." Bladt Industries manufactures a huge variety of complex steel structures, including turnkey solutions, for both on and offshore projects. Their range of products includes foundations and substations for

offshore wind mill projects, suctions anchors, topsides and jackets for oil and gas projects as well as buildings, bridges and harbour structures for infrastructural projects." Bladt Industries has contributed with expertise, knowledge and know-how to a wide range of ground-breaking oil and gas projects. (Bladt Industries A/S, 2012)

Siemens Wind Power (SWP), with its headquarters and development centre is one of the largest players in the wind business; their local office is located in the area of the Port of Aalborg. It is one of the forerunners in sustainable production of energy; the corporate supplies wind turbines and wind farms all over the world. SWP is one of the world's five leading wind turbine manufacturers and is currently the largest supplier of wind turbines for farms at sea. As building wind turbines under such harsh conditions, they possess exceptional knowledge in construction and logistics. SWP has a significant part in the entire Danish wind industry. (Siemens, 2012)

6.2.2. Networks

The Port of Aalborg initiated the establishment of *CELOG* (Centre for Logistics) at Aalborg University to improve the logistics. CELOG's research and projects play an important role in the development of the port since the value-generating activities are based on the newest knowledge of logistics products and processes. As CELOG states on their website; "environmental concerns are becoming an essential part of supply chain management. Industries are required more than ever to comply with emerging climate policies such as the EU Emission Trading Scheme, as well as satisfying increasing consumer demands for carbon neutral products and for environmental consideration." Centre for Logistics concentrates on tools and methods in supply chain management and logistics that consider the environment as an optimisation alternate. CELOG's activities are highly cooperating and include several types of collaboration with companies and other institutions. (Aalborg University, 2012) CELOG is not strictly a company nor a network, it is a centre that belongs completely under Aalborg University, thus later when the partners of the Port are divided into groups, it is presented as an independent group.

Hun North is a network profiling within wind energy, located in Aalborg. The members are companies active within the windmill industry, directly or as subcontractors to larger manufacturers. At the planning stage of Hub North, the initial idea was to create a network for all wind turbine companies in northern Denmark. The Port of Aalborg was a front-runner in the arrangement with a group of other interested parties. The companies in the network work together by knowing and utilising each other's' know-how, and as a geographic industrial cluster, there is also collaboration across the various regions of Denmark. Thus the creation of the network was the joint interest for companies, businesses, the harbour, the university and for the state. The aim of the network is to try to bring together manufacturers, suppliers, advisors etc. to share their knowledge and to help each other to develop further to be able to attract foreign investors and be the well-known worldwide. *"The aim of Hub North is to promote, unite develop and strengthen the North Jutland wind turbine industry."* (Hub North, 2012)

Arctic Business Network is an informal transatlantic network, located in the area of the Port of Aalborg and in the capital of Greenland. The members, based both in the northern part of Denmark and Greenland, try to achieve a very positive synergy for the benefit of not only their own business, but also with the common good in mind. The network seeks to develop cooperation among companies, organizations and authorities in Greenland and Northern

Jutland. “The aim of the network is to increase business awareness of each other and come together in partnerships, and it is absolutely essential for the network to promote and support business development and innovative projects among businesses across”. The network has four focus areas; infrastructure, natural resources, foodstuffs and tourism (Artic Business Network, 2012).

The Netværk 9220 is a young network based on the campus of the Aalborg University, sharing an office with Artic Business Network. The network is aiming to foster collaboration, trade and synergy among the many businesses in the east side of Aalborg with the postal code 9220. The network encourages participation to provide individual enterprises an increased influence on local development and thereby create beneficial situation to all. Its mission is to bring together business organizations in the postcode 9220 and helping them to form collaboration with relevant professional bodies and authorities. (Netværk 9220, 2012)

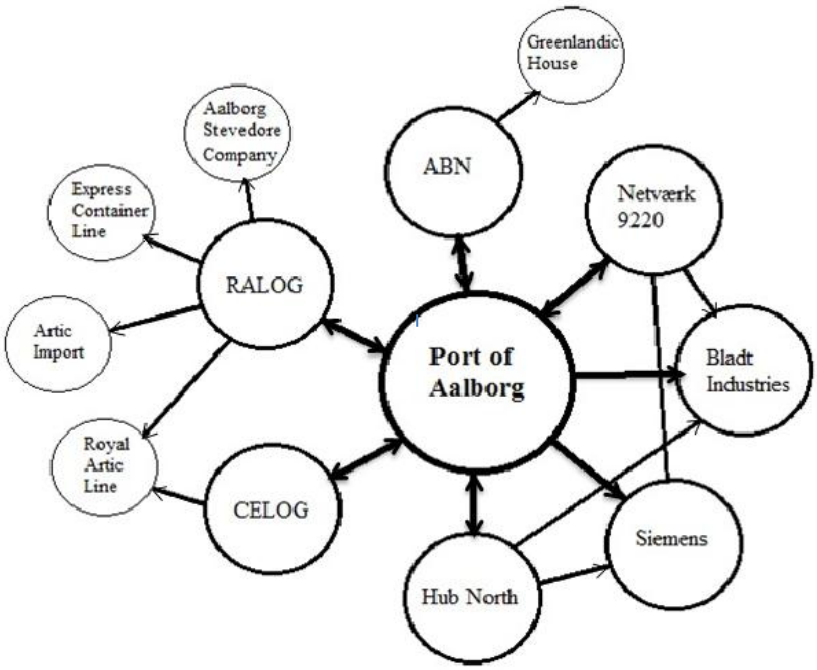
7. Analysis

Based on the literature, it is assumed that if the Port has well-functioning networking activities, it can contribute to sustainable solutions through knowledge sharing. Networking theory is used to understand how the networking activity can be "measured", and it suggests investigating actors, activities and resources. Interviews conducted with the employees of the Port and its partners were used as tool to gather the information needed. The interviews are shown in detailed in the analysis part.

7.1. Map of connections

In the first part of the analysis, I would like to present a map that shows which companies were mentioned as most important or closest partners by the interviewees (see fig. 8).

Figure 8. Map of collaboration



Source: own design based on the interviews

First the interview with the Port of Aalborg was conducted, where they named their 7 most important partners and a second round of interviews were conducted with these partners where they were asked the same questions. Double arrows represent the relationships where I had interviews with both parties and the collaboration was proven symmetric, single arrows present the ones where I had no chance for having an interview (e.g. Siemens or Bladt Industries). *This is only a map to illustrate how I received information during the interviews*; it does not mean that there are no other connections among the actors. Nevertheless I was expecting some connections that were not proven either through the interview or though the website of the companies, e.g. Siemens is not part of Hub North regardless the common aim to improve the windmill industry.

The answers are analysed through the lens of theory, thus aspects like *actors, activities, resources, continuity, complexity, symmetry and informality* are discussed in depth. At the beginning the results are summarized in tables where, first the relationships among the *actors* are shown, including complexity, and informality, then the *activities* including continuity and last but not least the *resources* of the companies are analysed. Symmetry, the aspect that shows how companies see each other is really important, since there can be cases, where e.g. company A rates company B very high, and considers the relationship very important, however company B does not see company A the same way. To understand the symmetry of the following companies and network, the quality of the collaboration is investigated from both sides.

On one hand the side of the Port of Aalborg is described in two tables. Companies and networks are separated, since the collaboration with them can be completely different. Between two companies it's relatively easy to measure the quality of the relationship, whereas towards a network it is hard to do, since a network represents many companies and the trust and other aspects towards the network represents how the Port sees all the other member companies. Thus there is a differentiation made based on the form of the organization. CELOG is also a special case, as it is neither a business oriented company, nor a network; it is a centre of research that belongs to the Aalborg University. To avoid making three categories, CELOG is described in the table for companies, since in the first interview with the Port it was mentioned with the other companies.

On the other hand, the quality of the relationship from the point of view of the companies and networks is described. First the opinion of the company RALOG and the research centre CELOG is presented. I asked them to name their most important business partners, and answer all the aspect about actors, activities and resources. When interviewing networks I asked them about their relationship with the Port and whether they have an outsider business partner, or an emphasised member.

7.2. Analysis from the point of view of the Port of Aalborg

In general it can be concluded that the Port has a *strong and close relation with all the 3 business partners*. The differences of the style and trust can be traced back to different organization structures. Some partners have a more horizontal organizational hierarchy others have a more formal vertical way of approach. The Port identified the *willingness to corporate* as one of the most interesting features; it has a significant effect on the other aspect as well. One of the most important aims of the Port as mentioned before is to become a smart harbour, gain knowledge of the newest innovations and share it with its partners, thus innovative collaborations are also very common with all 3 partners.

The Port contacts most often RALOG and CELOG, they maintain a daily operational contact whereas with Bladt Industries and Siemens their contact is rarer, happens weekly or monthly. An interesting parallel can be drawn between the *regularity of contact* and the other aspects regarding *trust and willingness*. Where the contact is more often, the trust and willingness is higher, although it can be seen from the other side as well; when trust and willingness is high, they contact each other more often. I am not sure it is possible to decide which is the cause and which the effect is, but when starting up new partnerships is can be essential to keep in touch often. The efforts of the networks is also proved, as one of their main aims is to bring

companies together and create them opportunities to contact each other and develop more trust. Regarding *informality* RALOG is claimed to be the most informal partner to the Port, followed by Bladt and CELOG and the style remained more formal with Siemens so far. The relationship between the CEOs is similar to the style. The same can be seen as before, that the more informal the style is, the higher the other aspects (willingness, trust) are rated. Informality helps the development of partnerships, even if we just think about that it can be easier to negotiate over businesses during a golf match then through emails and contacts (see table 4).

Table 4. How the Port sees the companies and CELOG[4]

	Aspects	Royal Artic Logistics	Bladt Industries	Siemens Wind Power	CELOG
Actors	**Regularity of contact**	daily for operations monthly for management	weekly practical meetings	monthly for management	daily
	Style	informal, close	informal/formal as well	formal	informal/formal
	CEOs contact	private relationships among each other as well	private relationships among each other as well	formal relationship	private relationships among each other as well
	Access to CEO	easy to reach	easy to reach	hard to reach	easy to reach
	Trust (1-10)	9-10	7-8	7	9-10
	Willingness to cooperate	10	10	10	10
	Willingness to share information	10	7-8	7	10
Activities	**Activities**	attracting businesses, container feeders	construction, financing, investment	building a common road, transportation	knowledge sharing, creating new solutions
Resources	**Resources**	telephone line	financial investment	road	PhD student

Source: based on the interview

The Port of Aalborg shares different activities with its partners. Royal Artic Logistics is a strategic partner for the Port of Aalborg, which as a container terminal, is characterized by growth and an almost unlimited potential for further development. The container terminal is based on the traffic to and from the north Atlantic, with Royal Arctic Line as the driving force. In the strategic cooperation between the Port of Aalborg and the Bladt Industries, the Port builds buildings and power station, also finances some of the activities of the Bladt Industries, which invests in heavy machinery and develops businesses for the harbour. In the case of Siemens Wind Power, it rents areas from the Port for their headquarters.

Knowledge sharing is the most common with CELOG, not surprisingly as it was set up to provide knowledge for the Port. It is also important in the relationship between RALOG and Bladt, but not common with Siemens. It can be concluded that they share activities, where they equally depend on each other, and their relationship is crucial to both parties, and further profitable activities are welcome.

[4] CELOG is a research centre and not a company by form, but for the better space management it is mentioned here

The Port can boost with a success story of its collaboration with Siemens. Since Siemens produces so huge blades that cannot be transported on normal roads, the Port invested in building them a private road on their territory where they can solve the problem of transportation. In this way the road is their common resource, emerging from a common interest, as it would not have been built if Siemens had not needed it, and now as it is ready, they pay a road fee to the Port for using it, making a fair and profitable business. The quality of the relationships towards the networks is described in table 5.

Table 5. How the Port sees the networks

	Aspects	Netværk 9220	HubNorth	Artic Business Network
Actors	**Regularity of contact**	weekly	once in two weeks	weekly
	Style	informal, close	informal	informal
	CEOs contact	Mette Schmitt is a common contact with the Port	private relationships as well	Lise-Lotte Terp is a common contact with the Port
	Access to CEO	easy to reach	easy to reach	easy to reach
	Trust (1-10)	medium (developing)	10	10
	Willingness to cooperate	medium (developing)	10	10
	Willingness to share information	medium (developing)	7-8	10, even confidential
Activities	**Common activities**	common projects, buying material in bulk together, building bike road	conferences and meetings	conference, meeting, attracting new business, giving business advice
	Common interest	enliven businesses	enliven the wind power business	tighten the connection between Greenland and North Jutland
Resources	**Resources**	Peter Bang who is also a chairman in ABN	-	time of the employees, Lise-Lotte Terp, Anna-Sofie Olsen

Source: own design based on the interviews

In general it is concluded that the Port has a close relationships with its networks. It is partly due to the fact that the Port was actively participating in the set-up of all the networks. Artic Business Network was launched first in 2008, followed by Hub North in 2010 and Netværk 9220 is the youngest started out in 2011. Since Netværk 9220 is a young network, the trust and the willingness is in a developing stage, the members have to get to know each other better, engage in future activities and raise the trust among them. Their common activities are focused on common project, meetings, conferences (the last one 23.05.2012), buying materials in bulk, so they could get discount, and their latest project was to organize the building of a bike road together. The Port and Netværk 9220 are not linked with resources yet, but Peter Bang is a common employee with ABN.

Hub North has a longer history with the Port, it is proven well with the higher rate of trust and willingness to cooperate and share information. They have a close, informal relationship, and a common employee who makes the communication easier and faster. They share a very important common aim, which is to stimulate the business environment in the wind power sectors. It is a common aim with the Municipality as Aalborg can profit a lot from a well-functioning, united industrial cluster, that is competitive in the nationally and internationally as well. That is why the municipality has also employees in the board of Hub North. For the Port it is also profitable if the local wind power industry is flourishing, since they rent

territories from the harbour, use their facilities and pay fee for their road and services. The two organizations do not share resources so far.

Artic Business Network is the oldest networks collaboration with the Port. They contact weekly, and have a good informal relationship. In this collaboration Lise-Lotte Terp is a common employee making the contact keeping easier. The Port rated the trust and the willingness the highest; they share a lot of information with the network, even if it is confidential. Regarding activities they organize conferences, meetings together with the aim of attracting new business. They also give business advice to each other. The common resource is the time of all the participants and the two common human resources.

7.3. Analysis from the point of view of the companies

In the following section the interviews conducted with the business partners of the Port of Aalborg are presented. Although in table 2 it can be seen that the Port has picked and described three companies (RALOG, Bladt Industries and Siemens, CELOG), unfortunately there was no opportunity to have an interview with Siemens or Bladt Industries, and thus only RALOG and CELOG provided information. The symmetry between Siemens, Bladt Industries and the Port is not proven.

The name and the status of the interviewees are the following:
RALOG

- Esper Boel (marketing manager)

CELOG

- Peter Bjerg Olesen (PhD student, in collaboration with the Port of Aalborg)

7.3.1. RALOG

It is not a surprise as the Danish located part of the company can be found on the territory of the Port, in the Aalborg East Harbour. The relationship is described to be both formal and informal, but by all means a close collaboration. The CEOs know each other well, and keep up a tight cooperation, in addition they are both part of other networks so they meet and communicate outside the harbour as well. The contact between companies is described as a regular one, minimum weekly connection is experienced. The closeness between the companies from the side of RALOG is rated high. Trust, willingness to share information/knowledge and willingness to cooperate is rated the highest (9-10) possible that not yet violates the normal business interests. As on the actor's side a close collaboration is observed, there is the expectation that the two companies share some activities. First of all as I mentioned before, RALOG rents territories from the Port, and has its base in the harbour. Their main common aim thus is to attract new businesses regarding the shipping industry for two main reasons. It is a good business for the Port if more exporters/importers use the harbour and the facilities in the spot, they could rent more areas, provide operating services, and they receive dues after the shipping traffic. As for RALOG, their aim is to engage more and more businesses who are interested in shipping goods to Greenland. When asking Mr Boel about the resources, he mentioned some basic resources, like the common usage of telephone service, common roads and maintenance, but they do not share human or financial resources.

Another important partner for RALOG is the Express Container Line, which deals with logistic services and transportation all over the world. They transport goods from Aalborg to Geneva, which is a central point in ocean transportation, since from there, ships go to everywhere all around the world. The relationship between the two companies is described a close, but formal one. They keep in weekly contact, more on the employee's level, as the CEOs do not engage in a personal relationship. Even though the formal style, the willingness to cooperate and innovate together is rated high (9-10), well as trust and willingness to share information is rated medium (5-6). As their common activities RALOG operates the shipping line to Rotterdam, and takes care of the containers. They do not yet share any resources.
Aalborg Stevedore Company A / S was the next company mentioned during the interview. The company cannot exactly be called as a partner as it's a company that RALOG and the Port own together. They operate ships and also do land operations for companies on the harbour area, e.g. transport blades for Bladt Industries. The Port has 30% whereas RALOG owns 70% of the firm. As it is owned by RALOG, the trust and the closeness between the actors are at its maximum. They have daily/weekly contact, and their CEOs have a close relationship.

Artic Import is also an important company, which is not a business partner, but a very significant supplier for RALOG. Since 1978 Arctic Import has delivered products and services to markets in the North Atlantic. With a wide and deep range of quality products and concept solutions they cover requirements within the following business areas: retail, hotel & institution, food service, contractors' equipment and mining and ship supply. As they transport food, Artic Import need temperature controlled warehouses both in Aalborg and Nuuk (Greenland harbour) as well. RALOG operates these warehouses in Aalborg, in other words, supplies them with service. Artic Import on the other hand provides provision for ships and tries to develop the local business. The two companies have a regular, monthly contact, on many levels of the employees. The CEO s have a good relationship, they meet in other network groups as well.

As regarding sustainability, RALOG tries to be as environmentally friendly as possible. It is ISO certified in environmental management (ISO 14001) and work is also in progress to achieve working environment certification (OHSAS18001). Their main goal is to reduce to electricity consumption; they set goals for each year to achieve. Warehouses consume a lot of electricity, thus they are looking for new more efficient tools. They already did as much as possible in the offices; LED lights are installed inside the buildings. Another aspect they would like to improve in the future is the fuel consumption of the ships. The Port of Aalborg, RALOG and CELOG together are looking for new ways to innovate on the area of the Port, regarding internal moves and transportation, or the logistics of trucks outside the terminal.

7.3.2. CELOG

CELOG is a small network, started out in 1995; nevertheless it still puts a huge emphasis on networking. It is located on the main campus of Aalborg University, in the Department of Mechanical and Manufacturing Engineering. CELOG focuses on long term collaboration with companies and institutions, e.g. through industrial research and development projects, industrial and business researcher projects, student projects and competency. Their most important partners are The Port of Aalborg, Siemens, Bladt Industries, RAL and its subsidiary company RALOG and Agri Norcold.

CELOG maintains the closest relationship with the Port of Aalborg, which is understandable since the Port initiated its start up. Regarding *actors*, CELOG has a daily basis contact with the Port, which is described as a rather strategic, research based contact. The CEOs of the companies have a friendly, close relationship, which makes it easy to communicate with each other and to create an informal relationship. The CEO of the Port is also on the advisory board of CELOG. On a 1-10 scale where 1 represents the lowest and 10 the highest end, trust and the willingness to share information are rated at the highest (9-10) but also the other important factor; willingness to cooperate is rated respectively high (8-9). When talking about *activities*, the two companies have a wide range of collaboration. They work together on projects regarding logistics, always focusing on the newest technology, being the first to know and share. The possibility of mutual advantages were the one of the reasons the Port initiated the establishment of CELOG, and yet it is proven since CELOG gives advice to the Port on its logistic activities, and it enjoys the benefits of the already existing network of the Port. As regarding *resources*, PhD students represent the human resources the two companies share.

The second most important partner; Siemens has a more formal relationship with CELOG. As regarding *actors*, the regularity of contact is restricted to monthly bases. Due to the foreign leadership of Siemens the CEOs do not know each other, but even with the Logistic Manager of Siemens, CELOG do not engage in a close relationship. The differences in size and style of the leadership can explain the medium rating (5-6) of trust, willingness to cooperate and to share information. CELOG would always rate itself 10 regarding openness to collaborate, but the other parties are not so engaged yet. Concerning *activities*, it is important to emphasise that their collaboration is in an early stage, where one of the aims is to share more activities. As for now, students of CELOG work in Siemens, and they represent also the human *resources* that the two companies share.

The interview continued telling about the engagement with Bladt Industries. Their contact originates through the Port of Aalborg, and it is at an early stage yet. Their contact is more ad hoc then regular, and the style remained more formal so far. The executives do not know each other, thus we cannot talk about a close *actor* relationship. The aim of CELOG is the same as it is with Siemens; they would like to have a closer and more informal relationship, where more projects and researches would be among their shared *activities*. So far their activities and resources are not significant.

With Royal Artic Line and its subsidiary company Royal Artic Logistics, the collaborations is closer. Although their collaboration is based on projects, CELOG's aim is to develop a strategically successful partnership. *Actors* communicate on a monthly base, where the style of the relationship is yet formal. Due to the early stage of the cooperation; trust, willingness to cooperate and share information is at a medium level (5-6). There common *activities* focus on the development of the transportation of goods from the warehouses to Greenland. CELOG and RALOG also share student and research projects, and there is a chance for a future PhD exchange.

CELOG is a main contributor to sustainability and knowledge sharing in the area. On their website, the entire list of their previous projects can be found, and the last two namely PEOPLE and LOGINORD have some interesting input for this analysis. PEOPLE - Product-Service System across Life Cycle is project that aims to facilitate the exchange of knowledge, for developing new methods, models methodologies and ICT tools for the Product-Service System in collaboration among 8 other universities and colleges. The project organizes integrated exchange programmes, laboratory training, workshops and seminars and guest

lecturing as well. CELOG's part in the project is to provide knowledge within sustainability focusing on returnables (reverse logistics) and knowledge about operations management, new IT and spare parts management (Aalborg University 2012).

CELOG's previous project was called LogiNord, which dealt with sustainable logistics in Nordic fresh food supply chains. From a sustainable point of view, *waste* generated along the supply chain, and the elevated *transportation* due to the global characteristic of the sector, are the two main challenging points. "The LogiNord project aims to enhance the sustainability and efficiency of logistics in Nordic fresh food supply chains through new models, concepts and tools that will enhance coordination and improve supply chain planning and control" (Aalborg University 2012). The research is carried out in close collaboration with Chalmers (Sweden), Aalto (Finland). LogiNord is in a close involvement in a broad industrial network, results will be industrialized in close collaboration with key actors in the sector. The results will help reducing waste; increasing quality delivered to buyers, reducing costs furthermore improve the overall competitiveness of the industry (Aalborg University 2012).

7.4. Analysis from the point of view of the networks

In this subchapter the interviews conducted with Hub North, Artic Business Network and Netværk 9220 are presented. The name and the status of the interviewees are the following:

Hub North
- Kjeld Kærgaard Jensen (commercial consultant)
- Henrik Wadmann (project manager)
- Ole Brøndum (sales- and marketing manager in the Port)

Artic Business Network
- Peter Bang (head of secretary and also head of secretary for Netværk 9220)
- Anna-Sofie Olsen (PhD student in collaboration with the Port of Aalborg)

Netværk 9220
- Martin Drejer (network coordinator)

From the list of interviewees it is easy to see how many overlaps there are among the organizations, many of these employees work in more companies or networks.

7.4.1. Hub North

The Port of Aalborg is one of the most important connections for Hub North. It is considered a good, close business relationship, with a regular contact and a lot of common aims. Since the Port was one of the initials for setting up HubNorth, the trust and the willingness is high. Their common activities are built around the wind power industry and the related companies. Their main aim is to engage them in more collaboration and create a competitive sector where knowledge sharing has a special binding power.

As we can read one of Flemming Eriksen's first interviews as a consultant of Hub North he also emphasised the importance of collaborating and knowledge sharing: "We must help creating contacts and the companies must then be able to contact people from the Hub North organisation to get advice and help… here, we could have people in the network who simply

help others get the right applications drawn up and sent…we could perhaps also help them find out which companies it would be beneficial to work together with" (Eriksen, 2010).

Northern Denmark has over 80 firms working within the wind turbine industry, including the world's largest blade factory and a test centre. That makes Denmark's cluster of companies and research centres with the focus on wind energy. The actors in the network work together by sharing and utilising each other's' know-how, and a cluster, collaboration across the various regions of Denmark is also remarkable.

The success story as presented from the side of Hub North as well. There is a changing trend in the size of the blades of the wind turbines, they are becoming bigger and bigger, which makes it really difficult to transport them. They cannot be transported on average roads anymore, so there has been the problem how to get it from Siemens to the harbour. With joint efforts and brainstorming, a special "blade road" has been built and runs directly from Siemens in east Aalborg to the harbour. Such and similar collaborations make the network successful, where they can match the needs and the expertise and thus all can enjoy benefits.
The future work force that will create such developments is also ensured. Aalborg University is already a large supplier of engineers and researchers who are educated in the area of wind energy and sustainable energy. Sustainability is a core aspect of the industry, nothing shows it more than that already on the second network meeting of Hub North, the Climate Minister Lykke Friis, and the country's commander in chief in climate and energy took a visit. In her speech Lykke Friis expressed her enthusiasm for environmental solutions: "wind energy, in particular, will be pivotal within energy supply in Denmark. It is also absolutely necessary for three important reasons. We must think of securing the long-term supply. CO2 emissions must be reduced, and wind energy is an investment in future growth and competition. The wind turbines are the symbol of the future, and we must lead in the green race."

7.4.2. Artic Business Network (ABN)

The most important partner for ABN is the Port of Aalborg. The relationship is informal and friendly, they maintain a minimum weekly contact, mostly with Lise-Lotte Terp who is the head of secretariat in the Port, and chairman in ABN as well. The trust is rated very high among the two actors, and the willingness to share information and to collaborate is medium-high depending on how much it affect business interest. The two parties share a very important common aim that is to create knowledge sharing, common ideas and the possibility to learn from each other in the network of companies connected to the Port and Greenland. Since all the traffic to Greenland goes through the Port, it is highly in their interest to bring more companies and partners, attract them with knowledge and attractive business environment. Thus the Port invests money in ABN, for organizing conferences, or for the study expanses of Anna-Sofie Olsen the PhD student. In the sense of good personal relationship between the actors, common activities and aims, and also shared financial and human resources, ABN and the Port have a very well working business relationship.

The network has also a very important relationship with the Greenlandic House, situated in Aalborg. The house gives home for Greenlandic students, gives advice for Greenlandic people living in Denmark, and organizes common programs and activities. As the Artic Business Network represents a bridge between northern Jutland and Greenland, from time to time, when visitors arrive in Aalborg who are interested in the network, and they are taken to the Greenlandic house for presentations about Greenland, Greenlandic people, culture, and more. The Greenlandic house and ABN have great trust towards each other, they often contact each

other, when there are some activities that both could attend and help each other. The twp parties share a human resource as Lise-Lotte Terp is the chairman for the Greenlandic House as well.

7.4.3. Netværk 9220

The network is in its early stage, it has been set up about a year ago, and thus it was not possible to measure the three parameters that the theory suggested. Nevertheless it can be seen that the network is evolving rapidly, as in a year it could gather 64 members. I attended the conference on the 23rd of May 2012, which had the topic of networking. All the members were invited, around 30 of them attended the conference, and another 30 people were potential new members. An interesting lecture was held for the participants about the importance and know-how of professional business networking, where the participant were given the chance to try out some of the techniques and ask questions during the presentation and also in the breaks the real networking took place. According to Martin the trust among the members is developing, and more and more members join every month.
To see exactly which territory Netværk 9220 covers, I created a map with the outline of Aalborg East (9220) (see fig. 9), which is depicted with light red colour.

Figure 9. Port of Aalborg and 9220

Source: www.maps.google.dk

Aalborg East gives home to many businesses, including the Port of Aalborg (the pink square shows the territory) and AAU. Many of the offices of the networks and companies discussed in this thesis can be found on the area of 9220.

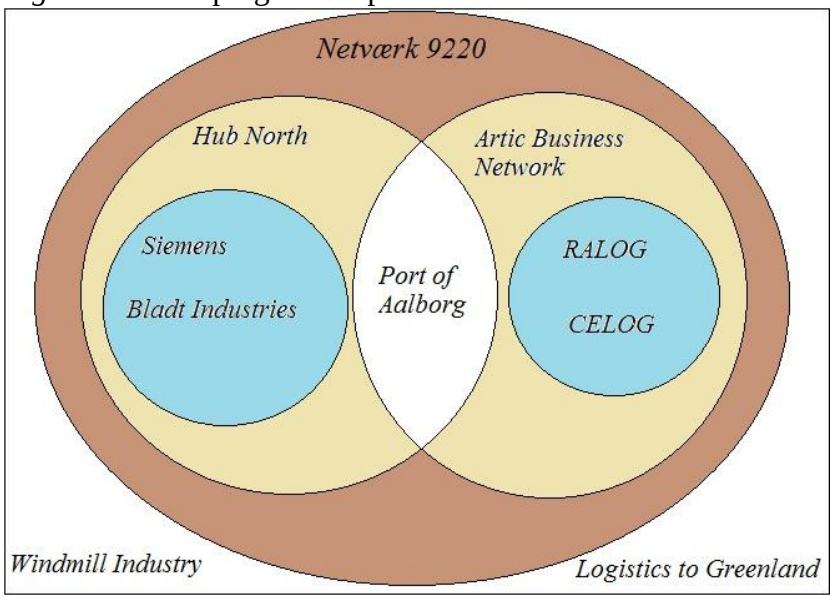
7.5 Summary of analysis

In this last subchapter of the analysis I would like to sum up some findings about the networking activities of the Port of Aalborg So far an analysis from the point of view of the Port of Aalborg, the companies and networks are presented. The Port of Aalborg mentioned two companies and three networks, and shared its opinion about them,

focusing on the actors, activities and resources. These companies and networks were visited and the same aspects were asked regarding the Port of Aalborg and their other partners.

After the interviews were conducted with all the parties, it became clear that the networks and companies can be grouped around two topics (see fig. 10)

Figure 10. Grouping of companies and networks



Source: own design based on the analysis

The Port named Siemens, Bladt Industries, RALOG and CELOG their most important business partners. These companies either belong to the windmill industry (on the left) or somehow connected to the logistics to Greenland (on the right). The Port of Aalborg is in the intersection of these two parts, it connects all the different kinds of companies and networks. The two parts are represented with networks in the area as well, HubNorth connects companies in relation to windmill industry and Artic Business Network connects companies who have connections to Greenland. The figure is only used for illustrating where companies and networks logically belong, but e.g. Siemens is not part of the network Hub North, even though they both represent the windmill industry. CELOG is also not directly part of ABN, but as Aalborg University is part of the network; CELOG is indirectly a member as well. Netværk 9220 is a special one, as it geographically covers both parts; all companies can be found in Aalborg East, although so far officially only Siemens and the Port of Aalborg belong to the network.

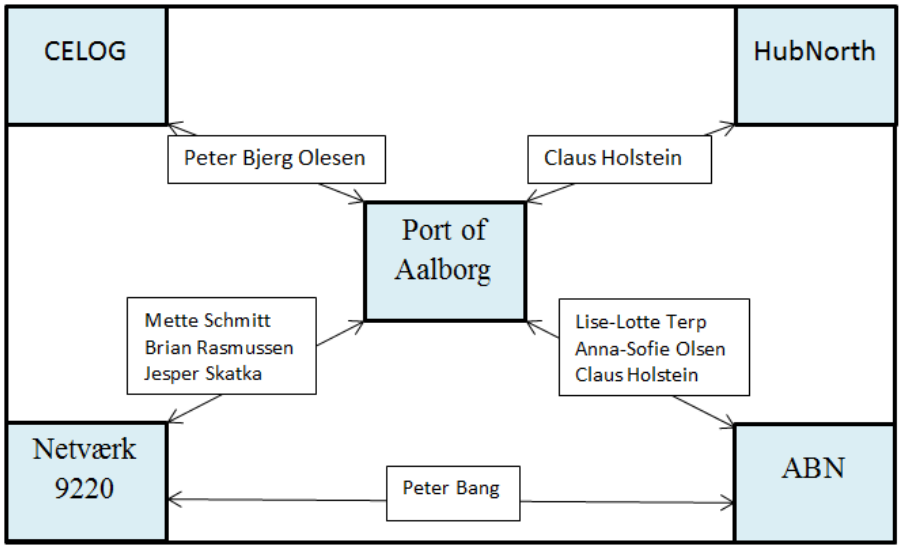
7.5.1 Actors, activities, resources

The summary continues about the quality of the networking activity of the Port. In the following part, *general conclusions are made regarding actors, activities and resources.*

In the case of *actors*, many overlaps among the employees were discovered after the interviews were conducted. Since the Port initiated the start-up of CELOG, Hub North, ABN and Netværk 9220, some of the employees of the Port became chairmen, project coordinator or PhD students in these organizations. According to the theory when

workers personally know each other, the quality of the personal relationship can positively affect the business relationship. It turned out to be true in this case, as a parallel can be found between the highly rated *trust and willingness to cooperate* and the *common employees* (see fig. 11).

Figure 11. Actors

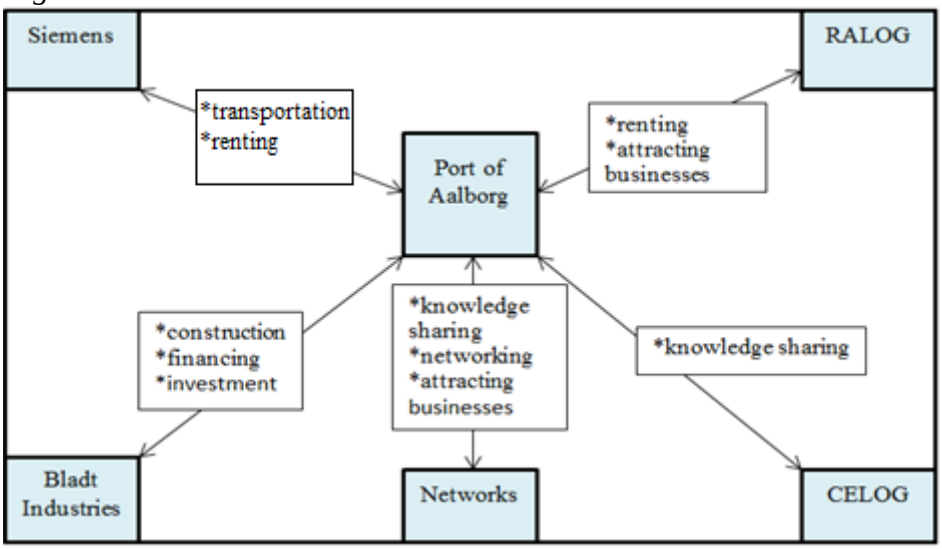


Source: own design based on the analysis

All four organizations - that share employees with the Port - rated trust and the willingness at least medium or high towards the Port. The contact between the actors in general was frequent as well, daily or weekly communication is observed. *Symmetry* is proven as well, as trust and willingness are rated high from the side of the Port too, which is natural since the initiation of these organizations was their idea.

Regarding their *activities* (see fig. 12); I would like to reach back to the literature review and remind the reader of the two proximities mentioned before.

Figure 12. Activities

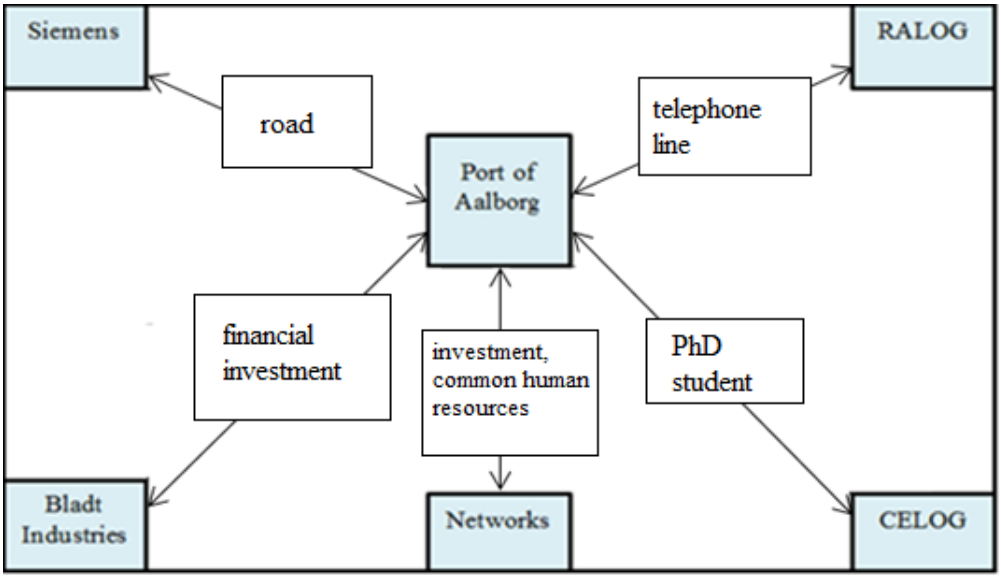


Source: own design based on the analysis

One is the physical proximity that I considered a given condition and the other is the relational proximity that I observe throughout the thesis. With the companies on the territory of the Port, in my opinion the physical proximity plays an equally important role as the relational one, as most of the activities are connected to the shared territory. Operating together, building up a common road, or paying the fee for the rent, are all connected because the companies are based on the territory of the harbour. With the networks and CELOG it is rather about getting together, sharing knowledge, sharing idea, having meetings and conferences, attracting more businesses to the area. In the networks case, relational proximity was much more important as they connect businesses to Greenland as well, and it is geographically far from Aalborg. The Port maintains a vivid, active participating in activities, it initiatives many of them, and tries to engage its partners in joining and having activities together. In my opinion the willingness among the companies to cooperate and find common grounds for activities is really high.

When summarizing *resources,* it is important to mention that resources are tightly linked to the activities. Activities are resource-consuming but at the same time resources limit the range of activities an actor can pursue. As e.g. the activity link between Siemens and the Port of Aalborg was about transportation, thus the resource tie is a road. With CELOG the activity meant sharing knowledge, which manifested in the resource tie as a PhD student. The analysis proved well, that the activities and the resources are linked in the case of the Port of Aalborg (see fig. 13).

Figure 13. Resources



Source: Own design based on the interviews

With the companies the resource ties are mostly connected to the fact that the parties are on the same territory. With the networks resources are mostly connected to knowledge sharing and common human resources.

All in all, it can be concluded, that the Port of Aalborg has a lively networking activity, and it does not only participate but also initiates collaboration with other companies and networks. The Port of Aalborg has tight actor bonds, various activity links and diverse

resources ties. All three aspects are observed to be well maintained and developing in the direction of an even tighter, long-lasting, trust based network.

As mentioned in the literature review (table 2), networking has great potential for sustainable solutions. The Port of Aalborg is actively participating is knowledge sharing in more ways. It seeks collaboration with other companies, even rivals to share knowledge. It could use networking to encourage the company itself and its partners to experiment with sustainable technologies, materials, and processes. It is a future potential to use its actor bonds, activity links and resource ties to make value chains sustainable. It could bring sustainability to their actions if they try to ensure that suppliers and retailers make their operations eco-friendly. The Port is Innovation is already increasing the use of renewable energy; this could be encouraged and expanded to all the companies on their territory. Logistics is a main focus for many companies and networks connected to the harbour, thus using their knowledge in order to apply techniques, or develop eco-friendly packaging could bring new innovations.

8. Discussions

In this chapter I would like provide some additional explanations and discussions of the findings of this thesis.

First, I would like to make it clear why there is a differentiation between companies and networks. On one hand, when the Port of Aalborg has a business relationship with a company, it is easier to understand, as there are only two players. Whereas, when observing a business relationship with a network, it is hard to identify the players. Should I observe to relationship with e.g. the secretary or coordination office of the network, or the relationship with all the members in the networks? Generally the answers were regarding the secretary or the coordinating office of the network, but still keeping it mind, that they represent much more than just an office.

On the other hand, I noticed a big difference in their attitude towards sustainability. Between two profit oriented private companies, sustainability will only be a common aim, if they find an area where it has commercial sense to collaborate about it. E.g. cost cutting, savings on energy, reusing each other waste has the possibility of financial benefits. Whereas in networks, sustainability is initially included in their aims and operations, without having to find a common benefit with the members. The Port of Aalborg is the most important actor in the area, who initiates sustainability. With their aim to be an intelligent harbour, they are willing to be the first harbour that is concerned with issues outside their original aims. The Port tries to set an example, encourage the partners to engage in their aims. It is easier to collaborate with the networks in sustainable issues, for the reasons mentioned before.

Another interesting discussion is presented about the use of networking as a tool for achieving sustainability. At the end of each interview, I asked all the interviewees if they use their networking or knowledge sharing for achieving sustainability but most of them did not really understood what I meant. In this case study, the companies do not use the connection between sustainability and networking, they do not exploit the possibilities, and they do not consider networking as a potential tool. A lot of initiatives are taken towards sustainability, if we just think that Siemens and Bladt are producing windmills that are the future renewable energy resources, or the ISO certificates that the companies have. There are also working groups or braches were environmental issues are the main focus, but strictly in this case study, networking is used for achieving better businesses and sharing information regarding opportunities or technical support and not for achieving better sustainable solutions, it is not a primary aim. During the interview, Lise-Lotte Terp also said, that in her opinion, even if they included environmental meetings and conferences in their network, and the members were interested, she thinks it would lead to setting up a new, separate environmental network. In her opinion, employees from each member company could be part of a new network, but it would not stay part of the business network. It could be true, that for a business network, that primarily considers businesses; environmental problems are too far from the initial aim.

And what connects the two discussions so far? It turned out that the aim of the network or the company is a truly important factor when talking about networking. Each network

is different and their aims can have a big influence on their networking activities. In the case of the Port of Aalborg, the companies are mostly interested in improving their businesses and attracting new ones, sharing technical information. The Port is aware of this fact, and knows it should not pressure too much the environmental potentials, since companies might lose their interest in collaborating with them, as sustainability is not their primary aim.

I think it is important to highlight, that this is a potential that the companies could exploit in the future. They all aim at sharing knowledge, but they did not mention that this knowledge could be about sustainable solutions, about using each other's waste, about innovations that could make them both benefit. I think it could have advantages, if they include in their already existing agenda, some forums where the participants can share knowledge about specifically environmental issues. It was a great observation of this thesis, that many companies and networks are not aware of the fact that networking and knowledge sharing could be a tool for achieving sustainability and the development of new, innovative, environmentally friendly solutions. It could have a powerful improvement if companies started consciously using their network not only for sharing the specific knowledge needed for their operations, but also information regarding environmental issues as well.

9. Conclusions

In this last chapter I would like to make some final conclusion of the thesis. The aim of this thesis was to understand *the potentials of the networking activity* of the Port of Aalborg in regards to sustainability. Based on the literature, the assumption was made that *if the Port has well-functioning networking activities, it may contribute to sustainable solutions* through knowledge sharing. Mixed theories were used to understand how networking activities can be observed. The networking theory suggested investigating the relationships of the Port of Aalborg through its *actor bonds, activity links and resource ties*. These aspects called for a qualitative research tool, thus interviews were used to gather information. First the Port of Aalborg was questioned about its most important partners and the quality of its business relationships with its partners. Using the snowballing technique the following interviews were conducted with the mentioned partners. Two companies (Royal Artic Logistics and Centre of Logistics) and three networks (Hub North, Artic Business Network and Netværk 9220) were mentioned as partners, thus interviews were conducted with all of them.

The analysis provides a very detailed description of the interviews, based on which, it can be concluded, that the Port of Aalborg has a lively networking activity, and it does not only participate but also initiates collaboration with other companies and networks. Port of Aalborg is a pioneer of its kind in trying to create a new, intelligent business environment among its partners. They have been actively participating in setting up new networks, strengthening their relationships, setting a great environmental example to follow, encouraging the knowledge sharing and spill over in the area and Greenland. Some of these connections are still in the early stage, but more and more networks came alive these years and the quality of the relationships among the companies is developing. The Port of Aalborg has tight actor bonds, various activity links and diverse resources ties. It is also observed that even though these three aspect show strong collaboration, the Port is in a difficult situation when trying to spread its mentality and engagement towards environmental solutions and networking. Companies are very business oriented and often do not see the opportunities in knowledge sharing and collaboration. It is a continuous and hard work the Port has to face when building its network further.

Given the geographical proximity and the observed *organizational and relational proximity* plus the *culture of cooperation and social capital in the networks of the Port of Aalborg, it has the potential for collaboration regarding sustainable solutions*. As activities are mainly about wind power and logistics, there is an overflow of experts in the local area, which combines with strong actor bonds could lead to a collective learning for better sustainable solutions. Both areas are continuously changing, using new techniques, new products, and they depend heavily on innovative solutions. It could be a success if they used this knowledge and to encourage their partners to experiment with sustainable technologies, materials, and processes.

V. References

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