GoA Assessing Offers and Preconditions for Multimodal Freight Transport in the Scandria®2Act Partner Regions

Work Package	3. Multimodal Transport				
Activity	3.2-4 Business Models for Multimodal Services				
Responsible Partner	PP19 Copenhagen Business School				
Author	Luise Noring & Julie Jo Nygaard				
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Output Description (Application Form)

The output of activity A3.2 is a report summarizing actions taken and results achieved. It consists of four main chapters, one for each activity:

1. Existing multimodal freight offers in the Scandria®2Act partner regions
2. The role of RoRo shipping in a stricter regulatory environment
3. Shipper needs in relation to multimodal freight transport services
4. Business models for multimodal services

The report provides a comprehensive overview of relevant multimodal services provided in the Scandria®Corridor.

The report is intended for use mainly by project partners creating a framework and common ground for defining / refining the scope of activities in the subsequent activity A3.3. However, the results can also be used by regional, national and European transport planning authorities, multimodal service providers, forwarders and shippers, knowledge institutions and industry organizations. The chapter on RoRo shipping is targeted multimodal freight service providers, who are considering including a sea transport in their supply chain.

The results of the investigation of shipper needs will complement the supply side multimodal offers with the demand side requirements. As such, shippers are vital as stakeholders involved in transport logistics, including those participating in the multilevel governance dialogue of WP4.

In terms of multimodal business models, the report evaluates multimodal collaborations by providing a scale of engagement from arm's length collaboration to close strategic partnership. This tool is coined the "Multimodal Collaboration Framework". All the collaborations described in this report are positioned on the scale of the Framework. Cost/benefits estimates are presented for different collaborative types. In Phase II, relational transaction costs are added to each collaborative type presenting further details on the 'cost of engagement' and thereby guiding the decision making process. The Multimodal Collaboration Framework targets transportation providers and B2B customers, including municipalities, regions and others.

Quality Criteria
(for all outputs)

Questions to be answered:

- What is the aim of the output?
- What is the thematic / geographical scope of the output?
- Who is the output addressing (target group)?
- How the output shall be used by the target group?

Index

1. Executive Summary

The scope of this report is to identify the pros and cons of different business models in the multimodal transport sector. The report presents different case studies, based on desktop research and in-depth semi-structured interviews with key stakeholders of different logistic companies from Hamburg, Örebro, Region Greater Copenhagen and Region Skåne. Below table illustrates the geographic location, the site, the collaboration cases and type of collaboration.

Geographic Location	Site	Collaboration cases	Relationship type
Germany, Hamburg	Hamburg Port Authority	1.1 Terminal Operator 1.2 Smartports 1.3 Elbeseaports	1.1 Purpose Driven Contract 1.2 Memorandum of Understanding 1.3 Strategic partnership
Sweden, Örebro	Logent	2.1 Tågfrakt 2.2 SCT Transport 2.3 Scanlog	2.1 Memorandum of Understanding 2.2 Memorandum of Understanding 2.3 Memorandum of Understanding
Denmark, Region Greater Copenhagen	Copenhagen Malmø Port	3.1 Toyota	3.1 Strategic Partnership
Sweden, Region Skåne	Skånetrafiken	4.1 Scandria®2Act cross boarder travel planning system	4.1 Strategic Partnership

These four collaborative cases have identified stakeholder organisations. The collaborative cases seek to improve their multimodal business either directly or indirectly.

The following learnings have been uncovered during this research:

Firstly, companies should outline their supply chain with the purpose of merging processes, creating synergies and economies of scale making their transport system more efficient.

Secondly, many of the challenges in the multimodal sector is due to the very complex and silo divided train and railway system across Europe. Different standards for rail tracks, train systems create huge barriers for creating efficient and effective multimodal business models. Train transport has to become more efficient in order for companies to use it.

An important factor in dealing with multimodal business models is that by combining modes of transport, another link is added to the supply chain. By adding an extra link means extra cost. This extra cost can be linked to the handling cost when unloading and loading containers or pallets with products. This requires time, personnel and requires the right equipment, -all of which adds additional cost. In order for companies to use train transport rather than trucks, there must be incentive of cost reductions. Most companies have to use trucks for the last mile. By adding another link (e.g., trains), the economic upside of multimodal transport must be clear. Business focus on saving money and increasing profit. The four sites examined in this report represents companies and organisations that are trying to improve multimodal transport. The most feasible way of reducing costs and improving profits are for companies to create synergies and economies of scale making their supply chain more efficient.

2. Part 1, Introduction

As part of the EU INTERREG Baltic Sea Region Programme 2014-2020, SCANDRIA®2ACT investigates the sustainable and multimodal transportation across urban and regional nodes within the Scandinavian-Adriatic Corridor.

The main objective of SCANDRIA®2ACT is to foster clean, multimodal transport and to increase connectivity and competitiveness of corridor regions, while minimising negative environmental impact induced by transport. For this purpose, all project partners will partake in designing new multimodal transport services and adopt multimodal capacities in the corridor regions. The SCANDRIA®2ACT Scandinavian-Adriatic Corridor is depicted below:

Title: Scandinavia-Adriatic Corridor (Scandria®Corridor), **Source:** www.Scandria-Corridor.eu **Date:** September 2017

As partner of SCANDRIA®2ACT, Copenhagen Business School is tasked with *mapping*, *understanding* and *capitalizing* the benefits obtained through multimodal partnerships, including partnerships between port authorities and shipping companies, and between shipping and rail companies, - to name just a few.

The Sustainable Urbanisation Team at Copenhagen Business School focuses on understanding the drivers behind engaging in multi-modal transport partnerships. For instance, why does the Port Authority engage in close partnership with one specific shipping company? Is it solely due to business considerations or is it also based on personal relations? What are the obstacles to forming close partnerships? And what are the opportunities, - for instance, co-investment in a new docking terminal, implementation of new information sharing systems, or targeting joint customers with bundled solution offerings.

Data collection was conducted through semi-structured interviews and desktop research. Before each interview, an interview guide and a conceptual paper introducing the Scandria2Act project were sent to each of the participants. The interview guide consists of ten questions aimed at categorising the different business-to-business relationships and at understanding the challenges and opportunities captured in each of these relationships.

Business relationships are crucial to most companies, because without relationships, companies cannot gain access to the resources of suppliers and address customers' demands. Relationships are in many ways the binding tissue of a company converting assets into economic value. For instance, the ability of a company to offer bundled solutions depend on the company's relationships with other companies in the supply chain. The scope of this report is to identify the pros and cons of some of the relationships each case company has.

Each case presents a short introduction followed by an analysis of a small number of selected collaborative relationships. The analysis identifies characteristics, opportunities and challenges. The below illustration presents the four main sites, where each site presents different cases of collaborative relationships;

Title: Overview of the case sites, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** February 2017

There are numerous ways of categorizing different types of collaborative relationships, those are neither pure market nor clear hierarchy.

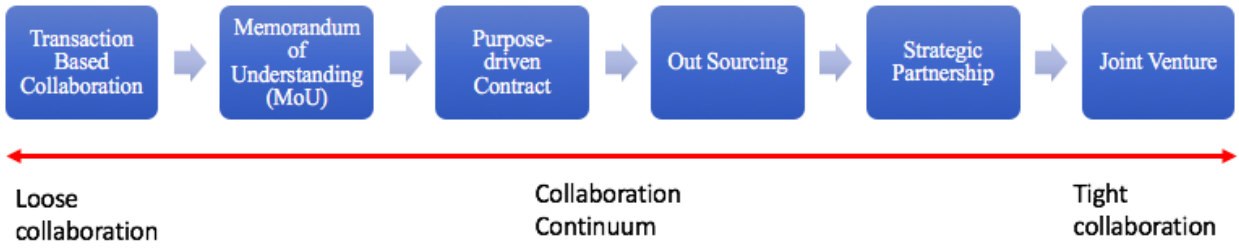
We use the below descriptions to classify each of the relationships, we study in this brief;

RELATIONSHIP TYPE	DESCRIPTION	ACTIVITY
Joint-venture	• Horizontal collaboration • Pooling of resources • Creation of synergies • Economies of scale • Long-term commitment – more permanent • Contractual agreement – each part is responsible for profits and losses • The venture is its **own entity** separate and apart from the participants' other business interest	• Exchange / Outplacement of companies and people – **long term** • Knowledge sharing • Team building events • Joint conferences • Creating a set of common standards and processes for the specific company • This kind of partnerships uses many of the above-mentioned activities because of the level of commitment
Strategic partnership	• Horizontal and vertical collaborations • Based on a **long-term** agreement in achievement of defined common objectives • Sharing of physical assets and/or • Intellectual resources • High level of synergies • Contractual agreement • Long term commitment (min. 3 years)	• Exchange / outplacement of companies and people – **long to medium term** • Knowledge sharing • Team building events • Joint conferences • This type of partnership uses many different activities in order to collaborate and form the partnership

Out Sourcing	• Vertical collaboration • Legally binding agreement on purpose specific collaboration • Medium to short term commitment (min. 1 year)	• Exchange/outplacement of people – **medium term/short term** • Exchange knowledge on particular themes • Study trips • Conferences
Purpose-driven contract	• Vertical collaboration • Legally binding agreement on purpose specific collaboration • Medium to short-term commitment (min. 1 year)	• Exchange/outplacement of people – **medium- to short-term** • Exchange knowledge on particular themes • Study trips • Conferences
MoU	• Vertical collaboration • Non-legally binding agreement of collaboration. • Often short-term (less than 1 year) • Limited integration of resources between the partners.	• Personal meetings • Conference calls • Low level of knowledge exchange
Transaction Based Collaboration	• Vertical collaboration • Often a formal or contractual agreement between the buyer and seller • **Price** is often the key nominator • Short-term commitment **No strategic** involvement	• Meetings • Conference calls • Minimum exchange of knowledge

Table 1: Overview of the different collaboration forms, **Source:** Luise Noring, **Date:** November 2016

In the below figure, we place each of the above relationship types on a continuum stretching from ‘pure market mechanisms’ to ‘clear hierarchical mechanisms’.



3. Part 2, Empirical Analysis

The second part of this report presents different case studies, based on desktop research and in-depth semi-structured interviews with key stakeholders of different logistic companies from Site 1: Hamburg, Site 2: Örebro, Site 3: Region Greater Copenhagen and Site 4: Region Skåne. The four case sites were primarily selected based on their geographic location along the Scandria corridor and their capabilities to foster multimodal transport collaborations.

4. Site 1: Hamburg Port Authority, Germany

Title: Picture of Port of Hamburg, **Source:** www.hafen-hamburg.de, **Date:** March 2017

The Hamburg Port Authority (HPA) was founded by state law in 2005 as a 100% municipal owned institution. Before 2005, the port management was spread out across different departments within Hamburg municipality. Thus, before 2005, no separate organisation entity acted as port authority. As port management was embedded in the municipality, it was more politically driven than it is today and under the management of HPA.

HPA consists of 1.800 employees overseeing all matters dealing with water and shore-side infrastructure, safety of shipping traffic, port railway facilities, real estate management, and working conditions of port employees. One of HPA main functions is to manage port development in terms of what buildings and businesses operate in the port. They are responsible for the planning of the land usage and port operations within the remits of the port.

When HPA decides to develop an area within the port, the process has to go through a tender. After the tender process, HPA decides which company should be granted the space for port development and operations. The partners sign a 30 years' contract. Taking into consideration that the contract runs for 30 years, HPA has to consider very carefully what would be the best long-term use of the specific land.

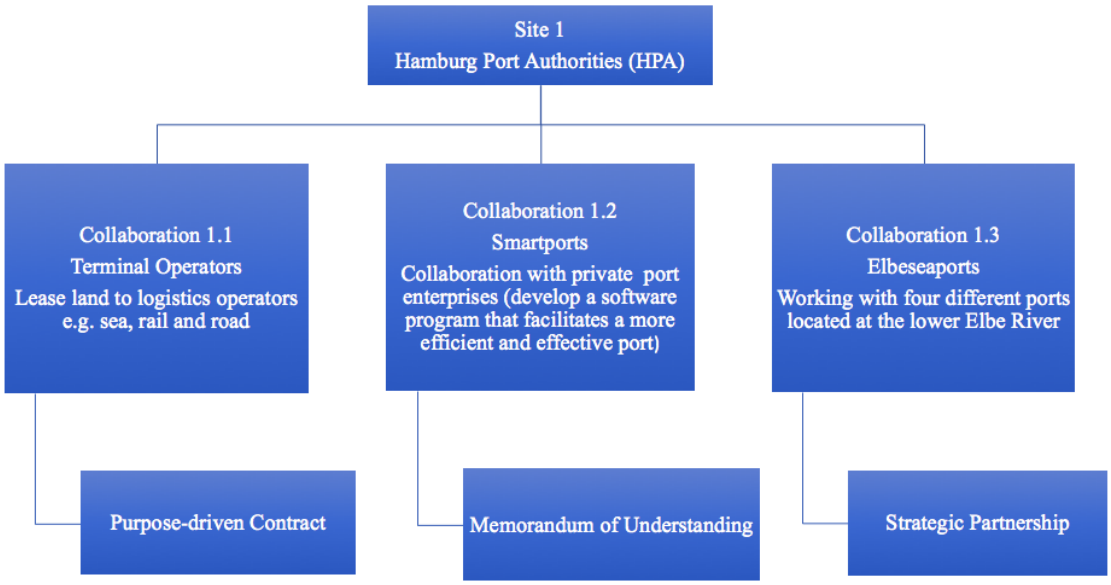
HPA's main purpose is to manage the infrastructure of the port and ensure the efficient operations of the port. In this way, HPA is responsible of:

- The port infrastructure, roads, and rails
- Tendering and long-term leasing of land
- Facility management and services
- Management of traffic flows
- Cluster management, - as a cluster manager, HPA has to manage the group of competitive businesses operating in the port, including making sure that they met rules and regulation

HPA is **not** responsible for:

- Building terminals, which is done by the terminal operators
- Handling of any kind of cargo
- Handling and managing the terminals

The below figure illustrates three different cases of collaborative relationships that HPA engages in:

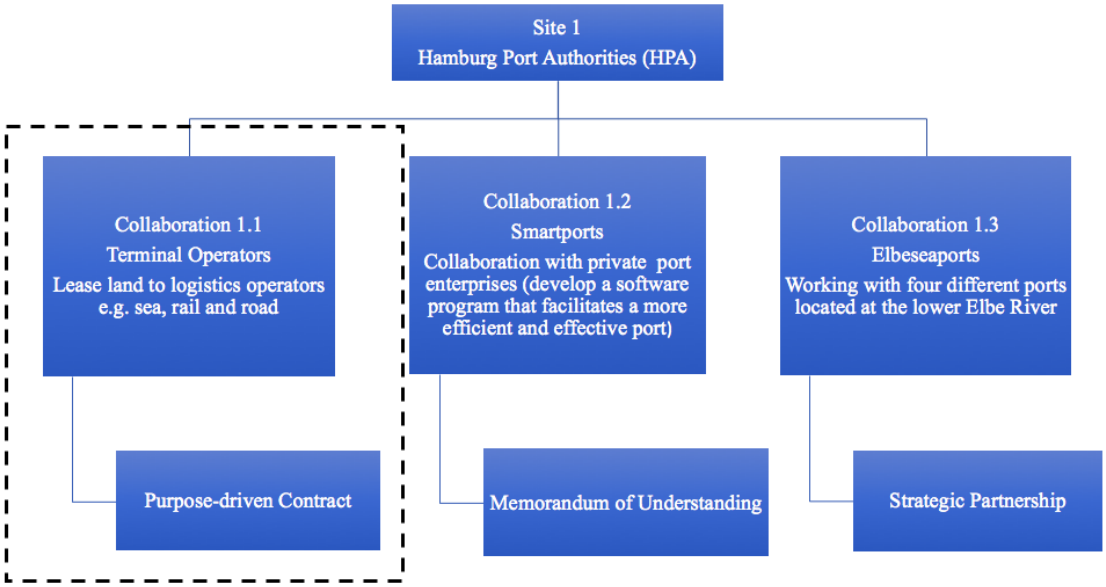


Title: Overview of 3 different cases of collaboration, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** May 2017

The above-mentioned collaborations have been chosen, because they illustrate how a port, like HPA, can have a diversified portfolio of collaborative relationships. Secondly, it is relevant to see how each of these relationships in their own way supports the multimodal mind-set. For instance, often freight forwarders use multiple transportation modes, including ships, trucks and railroads, for a single freight. When HPA leases land to logistic operators, such as rail, sea or road operators, they help create an environment, where freight forwarders can easily operate and choose between different transportation modes and operators.

4.1 Collaboration 1.1 Hamburg Port Authority and Terminal Operators

HPA is responsible for leasing out the land and making sure that the port area is developed according to demand. As mentioned earlier, HPA does not construct buildings. They only lease the land to companies and operators based on a 30-year leasing agreement. Before the lease is signed, HPA has to go through a formal tendering process. Companies and operators interested in that particular piece of land have to meet the requirements and conditions set out in the tender. With focus on the overall port strategy, HPA has to take a holistic view on land use and new developments. Due to the long-term of the lease agreements, it is crucial that HPA considers all future demands for port and logistic infrastructure. What seems as the best solution today might not be the best solution in ten or twenty years.



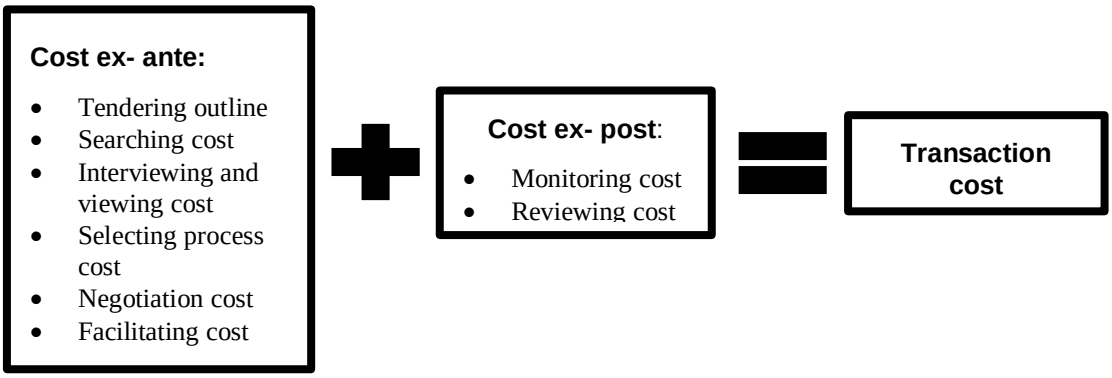
Title: Collaboration 1.1 Terminal Operators, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** May 2017

4.1.1 Reasons for collaborating

HPA is the supplier in terms of leasing out the land, and the operators are the customers leasing the land. The relationship between HPA and the lease-takers is mutually reinforcing. HPA needs the operators to develop and create a vibrant and value generating port, while the operators need HPA to gain access to land and infrastructure, where they can develop and improve their business.

4.1.2 Collaboration characteristics

The transaction cost is often higher before the actual contract is signed than the accumulated costs generated after the lease agreement has been entered. This is due to the comprehensive legal work that is put into the development of the contract before the partners sign the agreement. A lot of resources are also spent on searching and gathering information about the potential lease-takers, since HPA has to make sure that they choose the right 'company for the job' during the tendering process. This all adds to the costs of transaction. Below is illustrated the cost held by HPA before and after signing the contract.



Title: Overview of the costs held by HPA before versa after agreement entry, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** May 2017

First, the HPA has to draw-up the tendering outline. After the submission deadline, HPA will check the potential candidates before proposing an interview meeting. After interviewing the candidates, the selecting process starts. After the final candidate has been chosen then the final settlement of the contract is negotiated.

Even though, this relationship between HPA and the lease-takers is based on a long-term contract, which often indicates a level of strategic involvement, it can still be argued that this collaboration characterises as a purpose-driven contractual relationship. This is due to the high level of contractual details containing the specific tendering content and requirements. After the contract has been signed by both partners only limited involvement between them takes place, with only limited strategic engagement.

We define this collaboration as a **purpose-driven contract**, based on the identified characteristics:

- Legally binding agreement based on a public tender
- Limited strategic involvement between the partners
- Generally, a one-time transaction
- Low/medium level of uncertainty, contractual safeguarding

4.1.3 Collaboration challenges

The long-term contractual agreements between HPA and the operators create some level of uncertainty. Uncertainty in terms of what might be the best agreement today,

may not be the best solution for the port in 30 years. HPA has to be very proactively searching for market information that can help them forecast the future.

4.1.4 Collaboration benefits

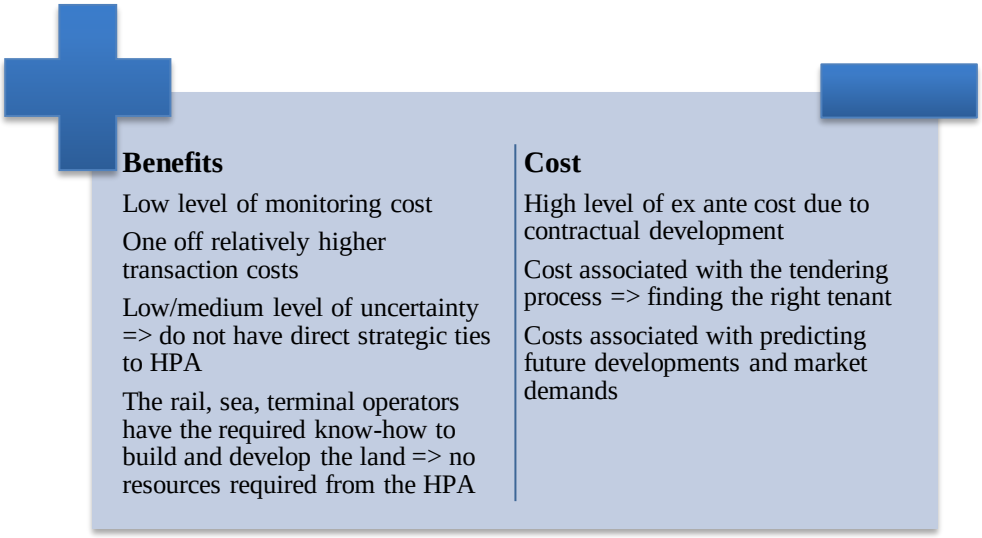
HPA's expertise in port management and infrastructure creates a solid foundation for coordinating and administering these purpose-driven contracts with the different port operators. HPA has over time developed a more standardised routine for managing contracts between themselves and port operators making it possible for them to keep transaction cost low. With this standardised approach, transaction costs are kept low, which, in turn, creates an incentive for HPA to keep this kind of collaboration in their relation management portfolio.

4.1.5 Future prospects and long-term goals

The relationships between the lease-takers and HPA is characterised as a purpose-driven collaboration. HPA conducts a tendering process, and the lease-taker who wins the assignment will fulfil the assignment within the parameters of the tender agreement. In other case, closer dialogue and collaboration is required between HPA and the potential lease-takers before a tendering process can commence. For instance, when the lease-taker faces a complex assignment that leaves aspects to be defined in collaboration with HPA.

In recent years, the demand for port facilities has shifted from focusing on container terminals to a greater interest in cruise terminals. HPA has been able to predict this shift in future demands for port facilities. This skill is crucial for maintaining the port's position as one of the biggest ports in Europe.

Costs and benefits with this kind of collaboration;



Title: Cost and Benefits for the Collaboration between Port of Hamburg and Terminal Operators, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** March 2017

4.2 Collaboration 1.2, Hamburg Port Authority and the Smartports Initiative

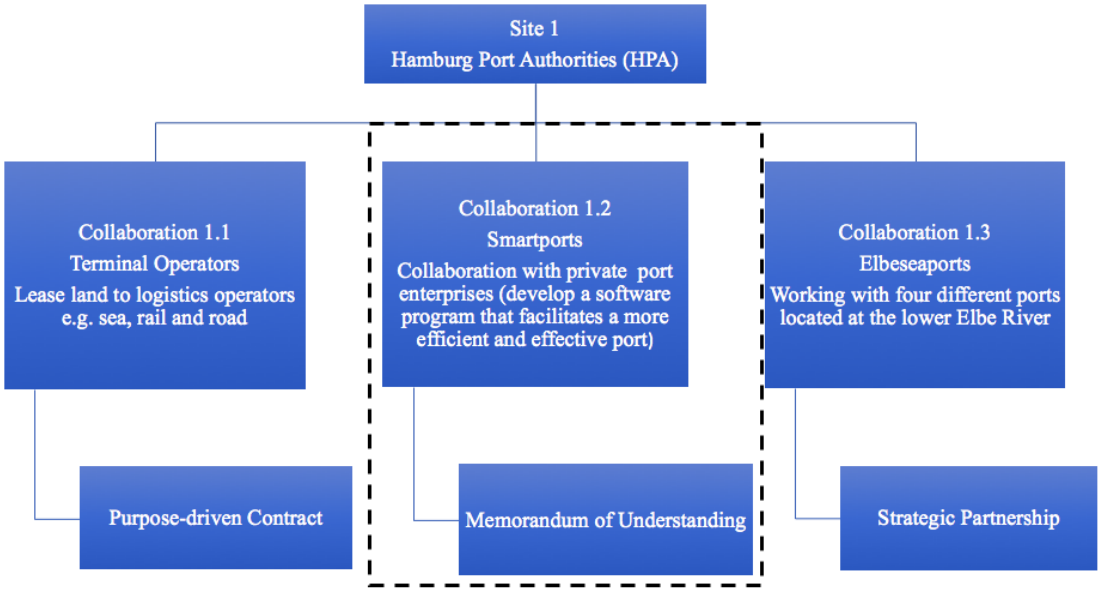
Smartport logistics is synonymous for *smart traffic and trade flow solutions* in the Port of Hamburg, - taking account of both economic and ecological aspects. Smartports focuses on infrastructure, traffic flows and trade flows. The Smartports project consists of approximately 30 small-scale projects, which each interlink and manage the services and functions offered by a broad variety of service providers and port operators. The overall purpose of this project is to increase the traffic flow efficiency of the Hamburg port.

Via an app, truck drivers and schedulers will receive personalised traffic and infrastructure information about:

- the traffic situation in the port and on the autobahns (in co-operation with the German automobile club, ADAC);
- the timeslots for when bridges are up, gates are closed and roads are blocked by heavy duty transport, - and other crucial traffic information;
- the situation at the container terminals, such as when a container terminal is full or when there is vacancy for deposit, - and other major operations, such as a large in-coming container shipment heading for a particular empty container depot

- parking facilities for heavy duty vehicles and/or large in-coming flows

This information enables HPA and port operators to quickly respond to changes, make long-term planning and avoid sudden disruptions in the logistic processes. For instance, the Smartports project facilitates collaboration between HPA and the packing and stuffing companies, which are responsible for the managing and handling of the containers and storage. Rather than moving in-coming containers to a storage area, as the 'stuffers' are accustomed to, Smartports may recommend that certain containers are moved straight to another docking area for continued travel. Thereby, one surplus trip of heavy containers is eliminated and traffic in the port area is reduced. In the same manner, empty containers can be moved straight to areas for reuse, - rather than being stored.

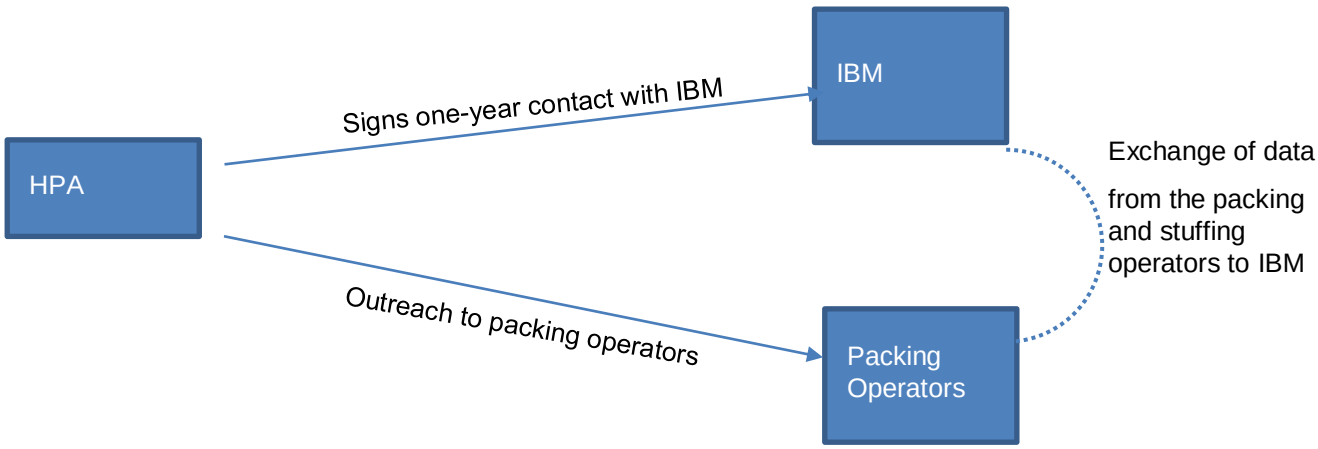


Title: Collaboration 1.2 Smartports, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** May 2017

4.2.1 Reasons for collaborating

HPA is experiencing a high level of empty containers going back and forth from the docking side to the holding areas, creating a lot of unnecessary traffic and congestion in the port area. In order for HPA to plan themselves out of this problem, they need specific data on traffic flow and road management. Such information can also help

schedule non-urgent trips for timeslots of low traffic. Before Smartports, the packing and stuffing operators and other port operators did not have any efficient system to handle the flow of containers and traffic in the port. HPA contacted some of these port operators in order to collaborate on developing and setting up the IT system and related app to help manage the traffic and container flows. HPA pays for this investment, while the operators collaborate with their knowledge and expertise, including testing of the new system. Since HPA did not have any experience in developing software systems, they signed a one-year contract with IBM for the actual development of the system. The port operators help gather the data necessary for IBM to develop the software. The Smartports collaboration was initiated to minimise this unnecessary traffic flow and to better control the traffic going in and out of the port. The picture below illustrates the constellation of the collaboration.



Title: The relationship constellation between HPA, IBM and packing operators, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** May 2017

4.2.2 Relationship characteristics

This collaboration can be divided into two types of collaboration forms. The contract between HPA and IBM is characterized as a **purpose driven contract**. They have agreed to sign a formal contract with the sole purpose of creating the software system that helps the port operators, including packers and stuffers, to control the in- and out-flow of containers and flows of traffic. A strengthened control of the container flow will help reduce the traffic in the port. We define this relationship as a purpose driven contract, based on the identified characteristics:

- There is a legally binding agreement between Port of Hamburg and IBM on purpose specific collaboration
- Medium to short-term commitment (min. 1 year)
- Limited level of interaction between the partners. IBM has been visiting Port of Hamburg to gain information and exchange knowledge on particular themes.
- No strategic involvement between the partners – this assignment has been outsourced to IBM since HPA do not have the required expertise to develop an IT solution of the required standard.
- Low level of uncertainty - both parties have signed a detailed contract committing each of them to comply with the agreed upon terms.

The collaboration between HPA and the packing and stuffing companies and other port operators, such as transporters, is of a more informal character. The relationship is built on a mutual understanding and continued collaboration. The HPA wishes to minimise the level of transport in the port and the companies want to optimise their operations in order to reduce cost. However, HPA did encounter scepticism, as the packers and stuffers worried that their business would be reduced through increased transparency to all port operators and increased efficiencies. This scepticism was overcome through close dialogue and collaboration focused on providing visible gains in terms of reduced costs for the packers and stuffers.

The collaboration between the packing and stuffing companies can be defined as a **MoU** with an implicit strategic aspect based on the following characteristics:

- No contractual agreement between HPA and the packers and stuffers (port operators)
- Long-term vision
- Sharing of physical assets and/or intellectual resources in order to optimise container handling - creating synergies leading to higher efficiency
- Knowledge sharing between Port of Hamburg, IBM and the packing and stuffing companies – co-development of solutions
- Creating a set of common standards and processes for the handling of containers in the port
- This kind of partnerships uses joint activities to gain an understanding of each of the partners' challenges and desired outcome
-

The subsequent analysis focuses mainly on the partnership between HPA and the packers and stuffers operating in the harbour. They have been most impacted by the introduction of Smartport. Both in terms of data sourcing, - in order to build the IT system, and in terms of usage of the finished system. The acceptance and continued involvement of the packers and stuffers are, therefore, crucial for the ongoing success of Smartports.

4.2.3 Collaboration challenges

Two main challenges were identified. The first challenge was the resistance experienced from the stuffing and packing companies. Initially, the companies thought that the Smartport project was a good opportunity for improving their business operations. However, with time, the companies realised that with a more transparent and streamlined transport system available to all port operators, benefits could be harvested by all port operators to the extent that the packers and stuffers would become less key or obsolete. Packers and stuffers began fearing for their jobs, and consequently, they became more hesitant to engage in the project. Secondly, HPA is public owned, and they are operating with public money. This means that they had to take care of not damaging the labour market in Hamburg. The public was concerned that HPA was engaging in activities and spending tax-payers' money on initiatives that essentially made people redundant. HPA had to steer away from the political discussions and defend their investments on the basis of improved efficiency and competitiveness.

4.2.4 Solving the challenges

In order for the HPA to solve these challenges, they had to convince the packing and stuffing companies of the potential benefits of this collaboration. These benefits were as following:

- Reduction in driver expenses due to a more efficient handling of containers that lead to less trips
- Less delay due to fewer bottlenecks, such as roads being blocked by heavy transport, etc.
- Higher customer satisfaction through fewer mistakes and improved customer responsiveness

To some extent these challenges are still on-going and demand continuous attention. HPA persistently engage in dialogue with the packing and stuffing companies. HPA helps the packers and stuffers think of alternative business opportunities and

purposes for areas that have been freed up from storage of containers that now go straight onto the next destination.

4.2.5 Collaboration benefits

One of the main benefits is the substantial traffic reduction in Hamburg port, which, in turn, reduces the investment required for infrastructure expansion by HPA and frees up scarce land for other activities in the harbour. Forwarding agents and other port operators benefit from fewer traffic jams and standstill periods. This means cargo containers can be forwarded more quickly by water, road and rail. The intermediary storage of containers has been reduced or eliminated, as the IT system tells the container operators, where the container should go next for redeployment, - rather than first going into intermediary storage and then onwards to the next deployment assignment.

The results of the Smartports partnership are lower operating costs by harvesting the network of port operators that already share information. The network and information sharing can be used for synchronizing activities.

Examples of activities that can be improved:

- Planning of timeslot for large-scale freight to be transported through the harbour,
- IT-supported traffic management,
- Data exchange
- Benefits for the other port operators: less traffic jams and standstill periods enhance flow and transport efficiency. In particular, HPA is able to reduce future investment requirements, as increased efficiency and optimised IT networks have led to a reduction of trucks driving in and out of the docking areas. This, in turn, has minimised the level of CO2 caused by excess truck transit. Thereby helping HPA and the city of Hamburg reduce CO2 emissions and reach their emissions reduction goals.

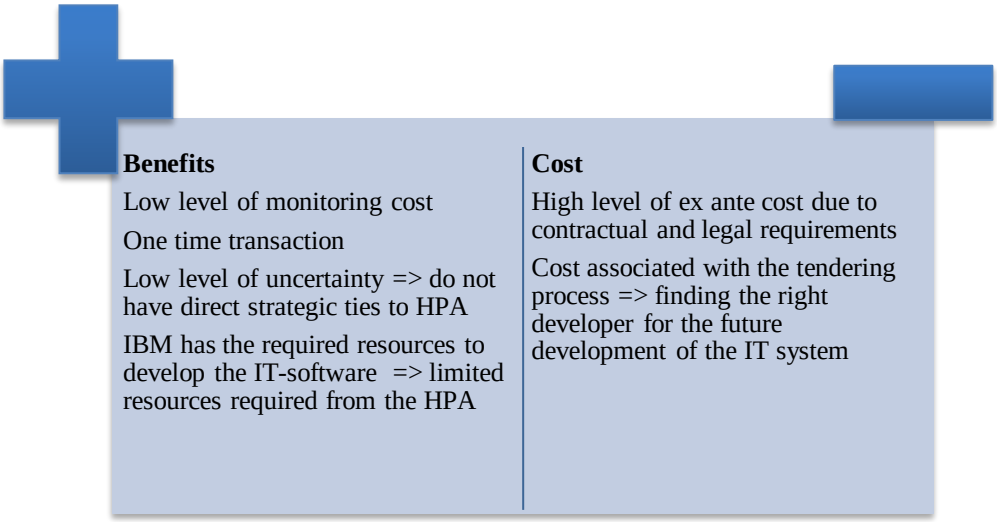
4.2.6 Future prospects and long-term goals

After one year of testing the software, HPA decided it was time to commercialise it. In the process of commercialising the software, HPA has conducted a tender for finding a new locally-based software development company that can take over the handling and further development of the software. In this way, HPA is spinning-off a new business and growth opportunity for the city of Hamburg.

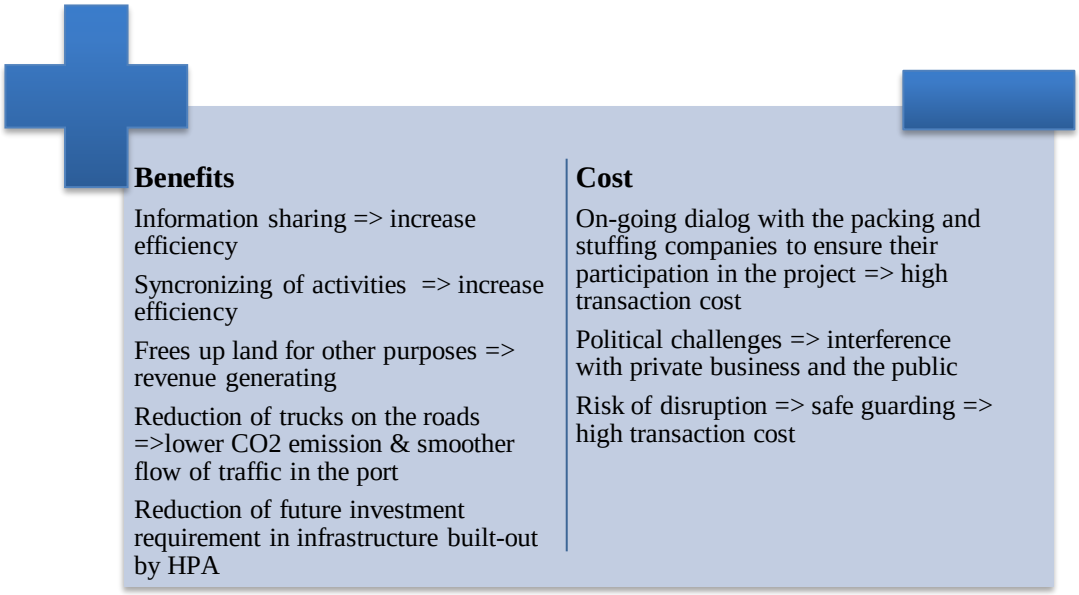
The aim is to interconnect all parties involved in the port logistics chain. With Smartports it is possible to monitor in real-time transport orders and the utilisation rates of infrastructure with the aim to increase the lifespan of infrastructure facilities

and to enable the more efficient and safer movement of goods. For this purpose, HPA needs to collaborate with all port operators and the software developer in their supply chain.

To sum up, the Smartports collaboration, is based on two types of collaborations. Each of these collaborations have their own set of characteristic and associated cost and benefits. Below is illustrated the cost and benefits of each of the collaborations identified.



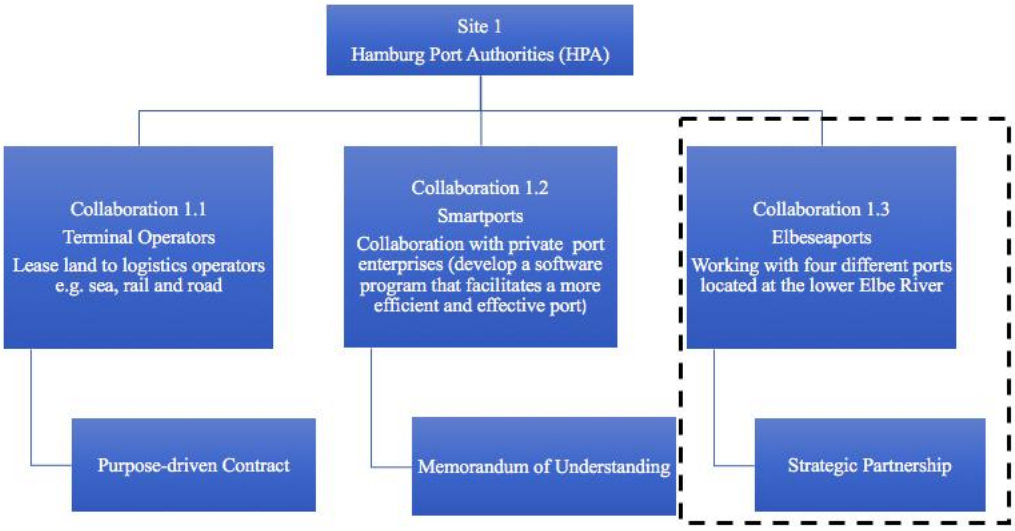
Title: Cost and Benefits for the Collaboration between Hamburg Port Authority and IBM, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** March 2017



Title: Cost and Benefits for the Collaboration between Hamburg Port Authority and Packing and stuffing companies, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** March 2017

4.3 Collaboration 1.3, Hamburg Port Authority and the Elbeseaports Collaboration

In 2009, five seaports decided to develop a joint plan for the “Lower Elbe Port Concept”. The five seaports and logistics centres; Brunsbüttel, Cuxhaven, Glückstadt, Hamburg and Stade, joined forces under the name “Elbeseaports” to promote the interest of the North German ports and business region. The five ports make up an intersection of foreign trade routes linking Central, Northern and Eastern Europe to the rest of the world.



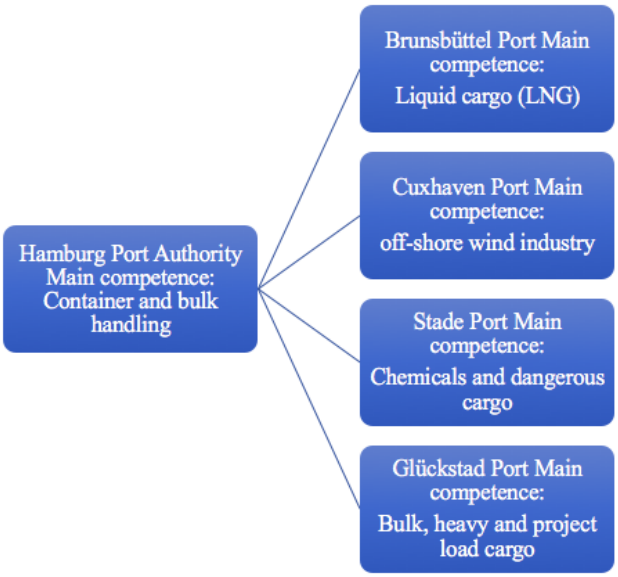
Title: Collaboration 1.3 Elbeseaports, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** May 2017

Title: Map of the Elbeseaports **Source:** www.meine-radtouren .de[1] **Date:** May 2017

These five ports make up Germany's largest port and logistics region. All modes of transport are available within this region, - providing environmentally friendly and

[1] http://www.meine-radtouren.de/Radtouren/radtour-elberadweg-cuxhaven-hamburg-brunsbuettel

efficient chains of transport. The close-knit network of the five ports provides comprehensive logistic solutions to handle all sorts of cargo, ranging from liquid cargo to off-shore services. The below figure illustrates the main competencies of each of the five ports:



Title: Overview of the core competences of the five Elbeseaports, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** May 2017

4.3.1 Reasons for collaborating

In a globalized economy, scales and specialization are crucial competitive advantages. Formerly Hamburg Port competed against the ports along Elbe river. However, in a global market, it makes more sense to collaborate and thereby, create a large-scale network of ports those combined efforts offers scales and specialization. The niche specialization comes to expression as one port, Cuxhaven, offers unique specialization within transportation for the off-shore windmill industry, while Hamburg Port is specialized in container handling. Amongst them, the five ports have selected and divided the areas of niche specialization making their full-package offering highly competitive in the global market of logistics and shipping. The mapping and acknowledgement of their differences help create a non-competitive environment between them. In situations, where one of the partner ports is not able to accommodate specific wishes from a customer, they will recommend one of their partnering ports: “If a new customer would like to build a new container terminal, then Hamburg port will say, sorry, but we can’t but please go to one of our

partner ports, in order to avoid the customer going to Rotterdam or Wilhelmshaven"[2]. This statement illustrates how the collaborative network is able to share their connections and recommend one another keeping business opportunities within the collaboration.

4.3.2 Collaboration characteristics

The collaboration between the five ports is characterized as formal and with personal bonds. The relationship can very well be termed as a strategic partnership since the alliance between the ports is formed between independent entities in the logistics channel to achieve specific strategic objectives and benefits, such as logistic and manufacturing advantages and access to markets. The Elbeseaport collaboration is a long-term strategic informal agreement between the five ports. A joint marketing department has been developed to enhance the branding of the Elbeseaport collaboration. Elbeseaports strongly promotes the common interest of the partners and the region in strengthening the global competitiveness of Lower Elbe Region. It works with local and regional governments as a joint force for business development and innovation.

The Elbeseaport collaboration can be defined as a **strategic partnership** based on the following characteristics:

- Long-term commitment
- Strategic vision – defined common objectives
- Synergies created by knowledge sharing
- Joint centralized organizational entity; marketing department

4.3.3 Collaboration challenges

One of the main challenges vis-à-vis the four other partners in the Elbeseaport collaboration was for the Port of Hamburg to change the partner's negative perception of Hamburg Port. Previously, Hamburg Port was associated with self-sufficiency, and a certain level of arrogance, as they were perceived to sit in the world league of ports, - a league that the four ports did not belong to. Therefore, the other ports were a bit hesitant to partner with Hamburg Port.

[2] Ingo Fehrs April 29. 2017 from Hamburg Port Authority AöR, dept. of Port Strategy elaborates the benefits there are in the Elbeseaport partnership

Cuxhaven was until 1937 colonized by Hamburg city. It was Hamburg city's strategy for Cuxhaven to be left starving for business, as Hamburg city believed that there was only room for one winner. The city was determined that this 'one winner' should be Hamburg port, - and not Cuxhaven port. This historic anecdote shows legacy problems that Hamburg port faced, when it took initiative to set up the Elbeseaport collaboration with its neighbouring ports. The neighbouring ports were both suspicious and positively surprised by Hamburg's intentions of creating a super port and logistics region of global dimensions and competitiveness.

4.3.4 Solving these challenges

HPA knew that in order to change this perception of being arrogant and self-serving, it had to invest time and energy in building strong and personal relationships. Over time and with ongoing dialogue, HPA and the four partner ports were able to identify opportunities for the Elbeseaport partnership. HPA meets on a regular basis with the partnering ports to discuss the new ideas and initiatives. A certain level of democracy and compromise must come from all partners. They know that in the end they will stand a lot stronger together than separate, which is a strong incentive for collaborating.

4.3.5 Collaboration benefits

One of the major benefits and strengths is that the partners can draw on each other's core competences and thereby create synergies. The different port authorities exchange their experience on issuing permits, conducting planning, maintaining port infrastructure facilities, policy restrictions, legal compliance, maritime issues, environmental issues and many other challenges. Thereby, the Elbeseaport partnership creates a network of knowledge sharing and build-up expertise. The five ports meet 2-3 times a year to consult and share information. In order to foster an environment for open information sharing and confidentiality amongst the partners, no records of the meetings are made, including minutes of the meetings. This facilitates a more open dialogue, where partners feel comfortable discussing sensitive topics.

In order to strengthen the global market position of the five ports in the Elbeseaport partnership, the partners have a joint marketing department and promote the partnership as one entity of scale and specialization.

Being Germany's largest logistic region, the Elbeseaport partnership has a competitive advantage in the global market. The Elbeseaport partnership capitalizes on each partner's area of niche specialization, which provides a solid foundation for future innovations. All modes of transportation are available within the greater area of

the Elbeseaport partnership. In its entireness, the partnership encompasses the entire supply chain and provides all business niches within supply chain management, including environment-friendly logistics, off-shore energy handling, liquid cargo transport, container handling and cruise ship management. This position attracts commercial or industrial corporations that are looking for immediate access too extensive seagoing and in-land transport routes and a diversity of specialization.

4.3.6 Future prospects and long-term goals

By creating a partnership, the Elbeseaports collaboration attains a stronger market position that improves business prospects both collectively, - but also separately for each partner port. The five ports collaborate deliberately towards new innovations, and as such the Elbeseaports collaboration provides the foundation for future innovations, such as sustainable logistic solutions. As a direct result of the focus on sustainability innovations, the port of Brunsbüttel is becoming an import terminal for Liquefied Natural Gas (LNG)[3]. This business will enhance new business in the entire region and help brand the Elbeseaports as a green and sustainable solution provider. In the recent years, HPA has discovered an increasing demand for cruise ship terminals. This means that other business niches will no longer be accommodated in Hamburg Port. Thus, HPA will henceforth forward requests for customers for services that it can no longer fulfil to its partners in the Elbeseaports collaboration.

Amongst the Elbeseaport partners, there is a joint understanding of the mutual benefits. Together with the German federal government, other regions and the private sector, the Elbeseaports aims towards shaping the future for the Lower Elbe Economic Region by setting up an integrated management plan for the Elbe estuary.

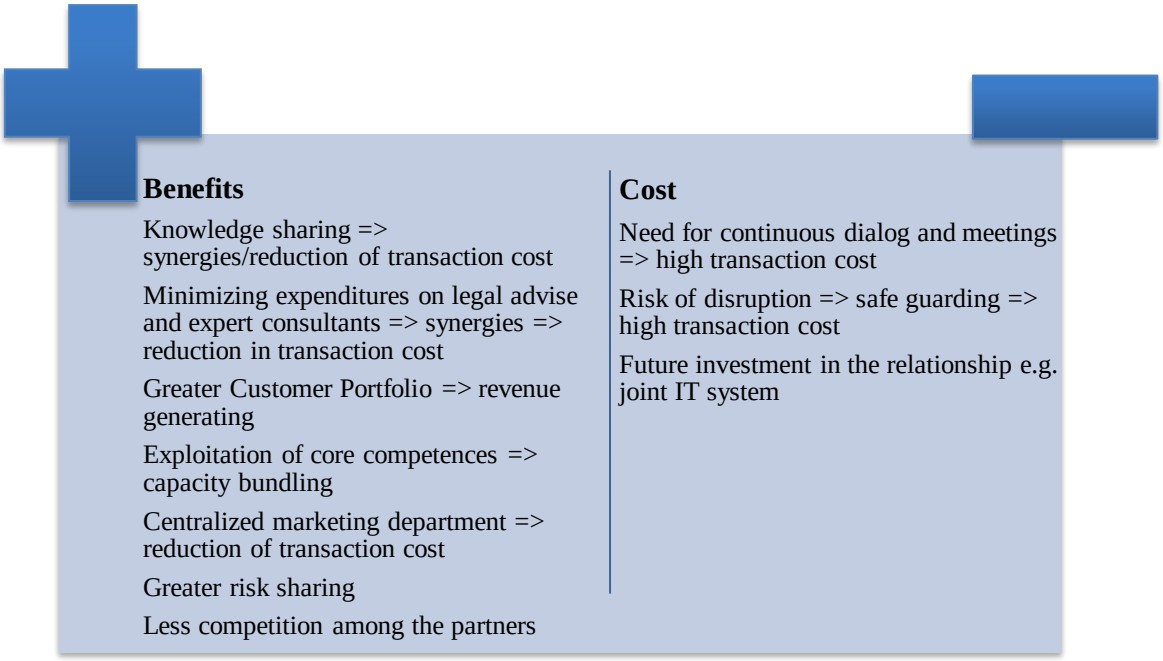
With time and increased closeness of collaboration, the partnership takes the shape of a *joint-venture.* By collaborating as a joint venture leads to shared risk and also a greater customer base that can be divided based on the five ports' core competences. This will lead to a stronger market position and a greater power to compete with the big multi-national companies.

Each of the ports understand that by joining forces and creating a strategic partnership, they enhance their efficiency through specialization and synergies. The Elbeseaport partners focus on their niche competence rather than diversifying investments to address all the current and future needs of customers. This saves costs and enhances opportunities of scales. This specialization and synergies allow

[3] LNG is used as renewable energy for ships and vessels.

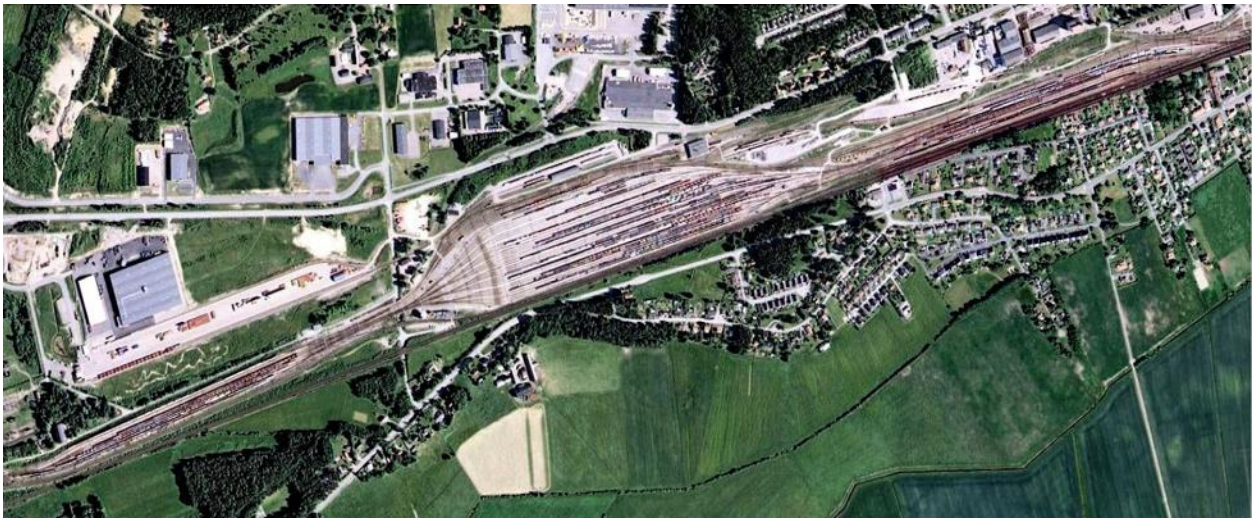
Elbeseaport port partners to divert customers looking for specialized solutions, reduce costs and maximize business and thereby, increase profits.

Cost and benefits with this kind of strategic partnership;



Title: Cost and Benefits for the Collaboration between Hamburg Port Authority and Elbeseaports, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** March 2017

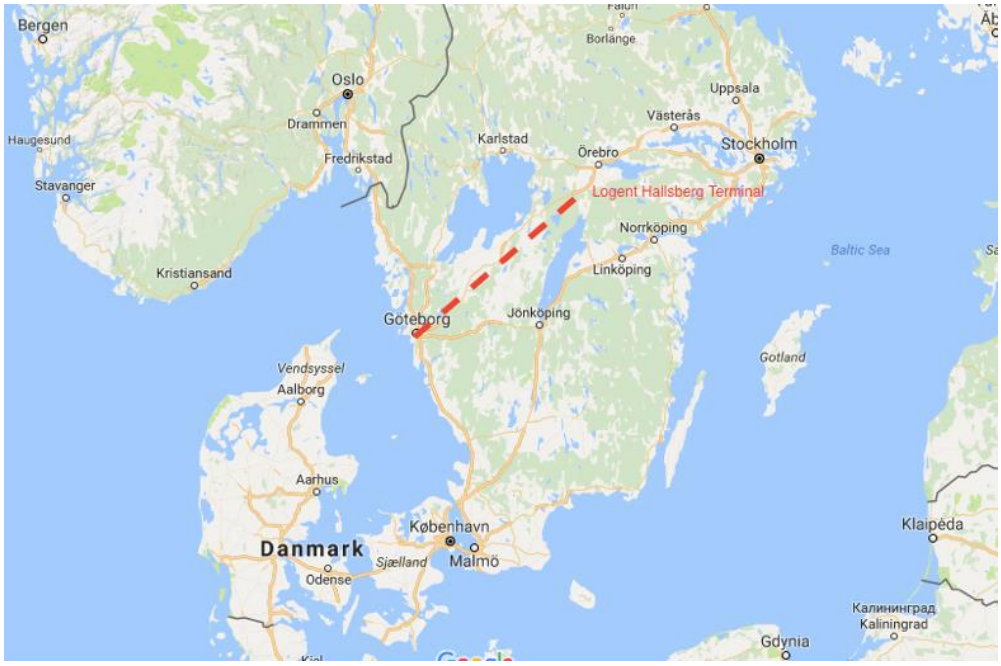
5. Site 2: In-land Logistics Hub in Örebro, Sweden



Title: Picture of the Hallsberg Terminal, **Source:** www.logent.se, **Date:** February 2017

This case study focuses on the in-land logistic hub Logent and their collaboration with three different logistic companies. Logent's operations is partly located in Örebro at the Hallsberg terminal. The Hallberg Terminal is a multifunctional hub located in the heart of Scandinavia. Over 50% of Sweden's population and over 60% of companies are situated within a radius of 200 kilometres from the Hallsberg terminal. The Hallsberg terminal is the hub of Logent's own intermodal freight terminal network and the largest intermodal freight terminal/rail port in Scandinavia. As a rail port, Hallsberg offers a strong environmentally friendly alternative to road transport with regular trains providing direct access to the Port of Gothenburg, where 30% of Sweden's foreign trade passes through.[4] Logent provides logistic services upstream and downstream the supply chain. The geographical scope of Logent's supply chain is illustrated below.

[4] https://www.portofgothenburg.com/about-the-port/the-port-of-gothenburg/

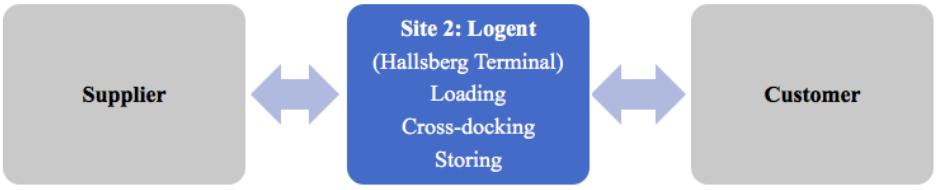


Title: Map illustrating the distance from Logent's Hallsberg Terminal to the Port of Gothenburg, **Source:** www.google.maps**, Date:** August 2017

The Hallsberg terminal also contains one of Sweden's dry ports. A dry port is an inland intermodal terminal directly connected by road or rail to a seaport and operating as a centre for the trans-shipment of sea cargo to inland destinations. In addition to their role in cargo transshipment, dry ports like the Hallsberg Terminal may also include facilities for storage and consolidation of goods, maintenance for road or rail cargo and customs clearance services. A dry port relieves competition for storage and customs space at the seaport itself and is often used as an extension of the seaports, which usually face severe storage limitations. Inland ports can improve the movement of imports and exports, moving the time-consuming sorting and processing of containers inland, away from congested seaports.

This case study analyses three different types of relationships between Logent and their customers. At first glance, it seems that these three collaborations are market based or based on a simple memorandum of understanding. However, upon further examination, each of the collaborations shows characteristics that generally ascribe to a strategic collaboration. Through this investigation, it became evident that many of Logent's individual collaborations were part of a greater network that seemed to be guided by a close web of personal one-to-one relationships. Each individual relationship becomes the node of a more complex network of relationships. Discussions of these relationships feed into recommendations focusing mainly on the benefits for Logent and their partners. The focal point of investigation will be

collaboration between Logent and its first-tier supplier and first-tier customer as seen by below illustration.



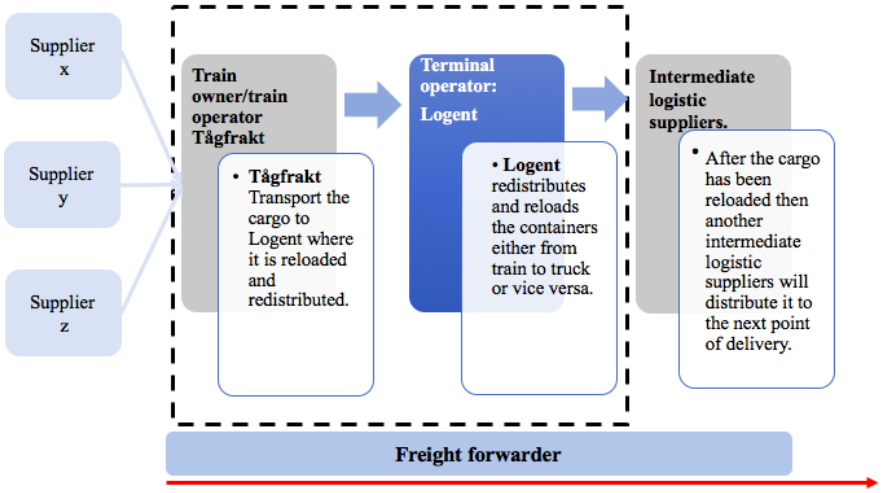
Title: The Supply Chain for Logent, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** August 2017

5.1 Collaboration 2.1 Logent and Tågfrakt

Tågfrakt is a Swedish family owned company. Their main competences are terminal management and railway logistics. Tågfrakt was started in Falköping in 1996, when SJ/Green Cargo outsourced their activities. Since 2005, they offer daily container shuttle departures in both directions between the Port of Gothenburg and Örebro.

The actors in collaboration 2.1:

- **Tågfrakt** (train owner and train operator): Tågfrakt transport the cargo to Logent where it is reloaded and redistributed.
- **Logent** (terminal operator): Logent is responsible for the reloading of containers and pallets from train to truck or vice versa.



Title: Supply chain for Collaboration 2.1**, Source:** Luise Noring and Julie Jo Nygaard, **Date:** October 2017

5.1.1 Reasons for collaborating

The majority of Tågfrakt's transport is done by train, which is why the collaboration with Logent provides a good and efficient solution for loading and unloading from trains to trucks and vice versa. This takes place within the remit of the Hallsberg terminal operated by Logent. The Hallsberg terminal provides the best solution in terms of geographic location (in the middle of Sweden), as well as competences and service offerings. The infrastructure interconnecting the Hallsberg terminal is a strong incentive for transport companies, such as Tågfrakt to use the terminal, and it is easy to get to and from the Hallsberg Terminal by road and rail.

5.1.2 Collaboration characteristics

The collaboration between Tågfrakt and Logent is characterised by a *non-contractual* agreement between the partners. They interact on a daily basis and at a transaction-by-transaction level. Due to the scarcity of alternative terminals located in the area, Logent is the only obvious choice. Furthermore, Logent is already collaborating with several of Tågfrakt's key customers making Logent a convenient choice for Tågfrakt in terms of implied understanding, trust and commitment. It follows that both Logent and Tågfrakt are collaborating independent of each other with Hector Rail and SCT Transport.

Hector Rail is one of the leading line haul providers for the European Rail Transport Market. It operates with many different companies ranging from industrial shippers, forwarders, intermodal operators, like Logent, and traditional railway operating

companies, like Tågfrakt. Tågfrakt and Hector Rail have been collaborating for many years, where Tågfrakt has mainly rented trains from Hector Rail when they did not have the required capacity themselves.

SCT Transport offers different door to door logistic solutions. SCT Transport has been collaborating with Tågfrakt for more than 10 years using Tågfrakt for transporting goods by train.

The two collaborations between Tågfrakt and Hector Rail, and between Tågfrakt and SCT Transport are not competitive to Logent. Hector Rail is leasing trains to Tågfrakt, while Logent offers terminal solutions. In this way, Tågfrakt and Hector Rail, SCT Transport and Logent are operating different spaces in the supply chain.

The reason for mentioning these two collaborations is to emphasise the fact that Logent and Tågfrakt are collaborating within the same supply chain and with some of the same companies. This could offer an opportunity for a new collaboration between Logent and Tågfrakt and third-party partners. This will be discussed and presented in the concluding section on recommendations.

To sum up, the relationship between Logent and Tågfrakt can be defined as a **MoU** based on the following characteristics:

- Non-legally binding agreement
- No strategic involvement between the partners
- Low/medium level of uncertainty

There is no formal contract between the partners, which creates some level of uncertainty (Håkan Ström, Tågfrakt, February 2017). This means that there are no guarantees that Tågfrakt will keep using the Hallsberg terminal. It also means that there are no guarantees that Logent will keep providing their services at the current price level. An informal agreement and trust have been established as the result of their collaborative history.

5.1.3 Collaboration challenges

As an SME, Tågfrakt has difficulties acquiring long term contractual agreements. This is due to the perceived risk and uncertainty associated with doing business with a small operator in a supply chain dominated by large companies. Smaller operators are more vulnerable to market fluctuations and economic shifts, as they have less resources to bolster against changes than larger and more resourceful operators. This presents one of the major challenges of Tågfrakt, when finding customers with goods of significant volume that need to be transported for a considerable distance

on a regular basis. They cannot afford to be too choosy in “selecting” customer companies to collaborate with. They compete on price as their main competitive parameter. The low prices diminish the profit margins of Tågfrakt, making them extra vulnerable, when it come to market fluctuations.

5.1.4 Solving these challenges

In order to overcome these challenges, there must be some kind of ongoing dialog between the partners. Logent is well aware that Tågfrakt is not their biggest customers, but they are still a valuable customer considering their long history of collaboration. Little negotiation and handling is required, since the partners already know each other and their preferences, why this collaboration is able to be competitive. It follows that the cost of doing business is diminutive.

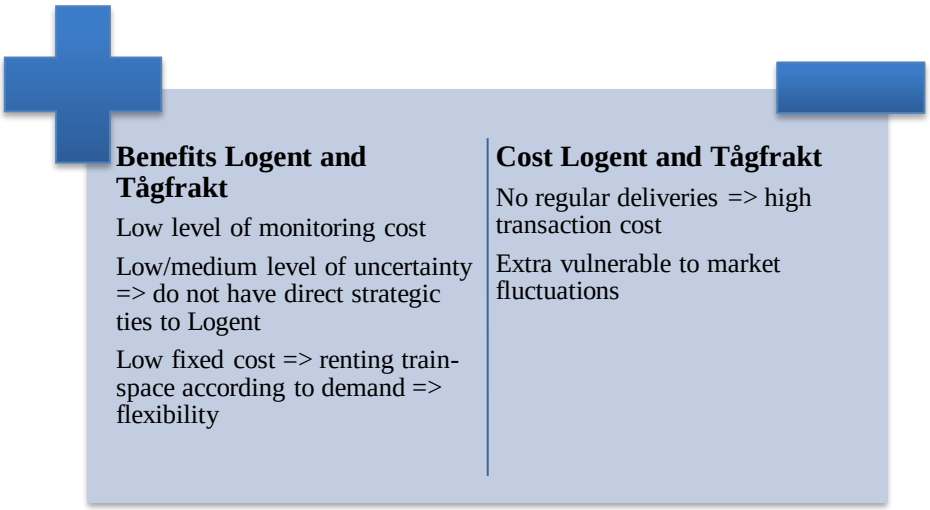
5.1.5 Collaboration benefits

One of the benefits of collaborating with Tågfrakt is that they are small and agile, and they are able to manage transport solutions that require a high level of flexibility and adaptability. Logent with the Hallsberg Terminal is able to provide various multimodal solutions due to their broad facilities. Thereby, Tågfrakt benefits from the collaboration with Logent, as it enhances the solution offerings that Tågfrakt is able to offer its customers. This presents valuable flexibility and ability to adapt and tailor make solutions.

5.1.6 Future prospects and long-term goals

The relationship between Tågfrakt and Logent is based on one-to-one transactions. As Tågfrakt and Logent are already supplying to the same customers, joining forces at a more strategic level could benefit both companies in the long term, including enable them to offer bundled services for which they can differentiate prices and thereby bolster against future uncertainties. A case scenario could proceed as follows: Logent knows of a company in the search of train space for a weekly delivery. Logent contacts Tågfrakt that can help transport this to the Hallsberg Terminal. By sharing information about potential customers, both Tågfrakt and Logent are able to increase their business, - whilst reducing the costs of competing against one another. This means that both Tågfrakt and Logent have to market themselves as full-service providers.

The costs and benefits of this collaboration are;



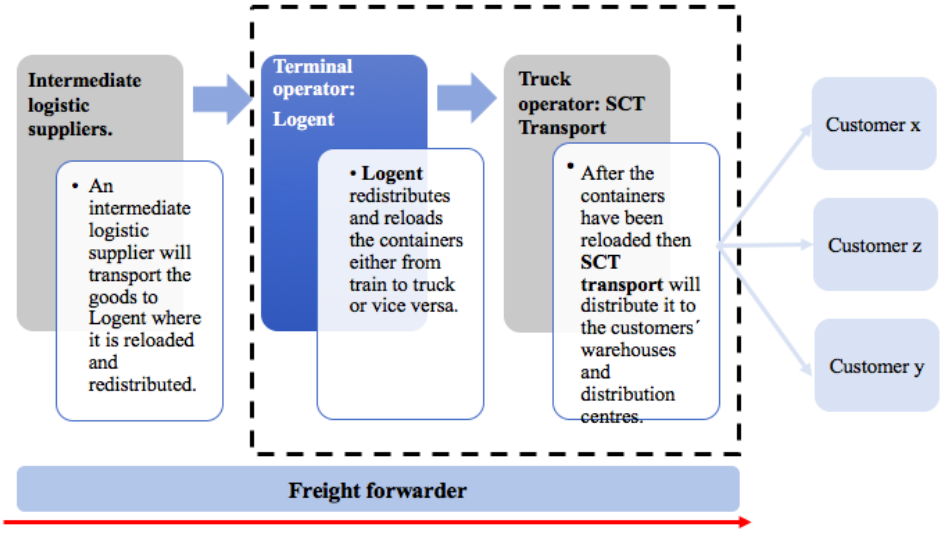
Title: Cost and Benefits for the Collaboration between Tågfrakt and Logent, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** September 2017

5.2 Collaboration 2.2 Logent and SCT Transport

The presentation of the collaboration between SCT Transport and Logent is combined with two other collaborations, SCT Transport have. This is to illustrate how SCT Transport and Logent already interact with some of the same customer and supplier companies. In this way, this section, like the previous, provides an analysis of Logent's supply chain.

The actors in collaboration 2.2:

- **Logent** (terminal operator): Logent receives the cargo and redistributes and reloads it onto the SCT trucks.
- **SCT Transport** (truck operator): Operates mainly as a road intermediate logistic suppliers. After the containers have been reloaded then SCT transport will distribute it to their customers' warehouses and distribution centres.



Title: Supply Chain for Collaboration 2.2, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** October 2017

5.2.1 About SCT Transport

SCT Transport is a wholly owned Swedish company founded in 1986. Today, SCT Transport has grown to become one of the largest brokers of container transport. SCT Transport operates 21 daily SIMA lifts, which makes them one of the largest container operators in Sweden. The SIMA lift is mainly used for container handling, when loading and unloading containers. SCT Transport's core business consists of road transport and container handling, mostly in terms of long-haul transport and heavy transport. Container transport is the backbone of their business and is available at all their locations in Sweden[i]. Besides truck transport SCT Transport also collaborates with Hector Rail and Tågfrakt on running four railway lines to and from Gothenburg. SCT Transport does not own their own trains but rents space and time-slots from Hector Rail in connection to their real-time demand (similar to Tågfrakt discussed earlier in the report).

5.2.2 Reasons for collaborating

Logent is the single multimodal hub in that area of Sweden. Even though, SCT Transport has their own container loading facilities, they do not have the same broad palette of facilities as Logent, which is why they often use the Hallsberg Terminal to unload and load from train to truck or vice versa. Transport by train is an increasingly important complement to truck transport, since a great quantity of containers can be transported via trains than trucks. Therefore, most of SCT Transport's customers will chose train for long haul road transport, when they want to move large volumes. Still,

in many instances, customers need trucks to handle the last distance before reaching final destination point.

5.2.3 Collaboration characteristics

The collaboration is characterised by low level of strategic involvement and no long-term agreement between the partners. SCT Transport gets in contact with Logent, whenever they need their services and makes the arrangements for that specific transport delivery. However, when asked about who they consider as their closest partner, SCT Transport answers Logent, based on their daily interaction. Even though, there are no legally binding nor strategic plans demarcating this relationship as a loose collaboration, the daily interaction between them creates a certain kind of familiarity which strengthens the individual relationships across the two partners: Logent and SCT Transport. Thereby, through continued daily interaction and alignment, their relationship resembles a strategic partnership.

To sum up the characteristics then the collaborative relationship between Logent and SCT Transport can be defined as a **MoU** with an implicit strategic aspect, based on the following characteristics:

- Non-legally binding agreement of collaboration between SCT Transport and Logent
- Often short-term (less than 1 year), based on a day-to-day and a transaction-to-transaction requirement
- Limited integration of resources between the partners

5.2.4 Collaboration challenges

The transport industry is very price sensitive, while simultaneously demanding a high level of service. One of the challenges impacting the collaboration between Logent and SCT Transport is to identify customers that are willing to commit to long-term collaborations without retiring and thereby compromising the price. No company will commit long-term, if there is a chance that in the near future another logistic provider can do the same job, as Logent and SCT Transport, but at a lower price. This influences the efficiency of the collaboration and makes the interaction between the partners more time consuming, since every new customer leads to a new one-to-one agreement, including paperwork and administration.

5.2.5 Solving these challenges

One of the main challenges in collaborations between companies is trust amongst the supply chain partners. Trust that they will not take advantage of sensitive information and “steal” customers from each other. In order to prevent this, the

partners must have a good and ongoing dialog ensuring that goals and objectives are aligned.

5.2.6 Collaboration benefits

Trust helps reduce the level of safeguarding against opportunistic behaviour. The enduring interaction between Logent and SCT Transport creates an implicit foundation of trust and reassurance between the partners, which minimises the required time and costs invested. With a high frequency of interaction, there are solid arguments for collaborating at a more strategic level.

5.2.7 Future prospects and long-term goals

The relationship between Logent and SCT Transport is based on informal day-to-day interaction that proves a strength of the collaboration. However, no formal contract has been signed between the partners, nor have they agreed to any long-term commitment. The current status of the collaboration is guided by an MoU.

However, interestingly, SCT Transport also collaborates with Hector Rail and Tågfrakt running four train lines connecting most of Sweden with one of the biggest ports in the Nordic region, - the Port of Gothenburg. By using the already existing collaboration between Hector Rail, SCT Transport and Tågfrakt, Logent can take a holistic perspective on the supply chain and develop joint solutions that optimize the entire supply chain. The benefits can be translated to each of the supply chain companies in the form of cost reductions and savings.

The costs and benefits of this kind of collaboration are:

Benefits Logent and SCT Transport	Cost Logent and SCT Transport
Low level of monitoring cost	No contract => uncertainty => Lack of long-term commitment => challenge to plan ahead => creating limited resources to invest in innovative and sustainable solutions
Low/medium level of uncertainty => do not have direct strategic ties to Logent	Frequent transactions => high transaction cost
Low fixed cost => renting train-space according to demand => flexibility	
No contract => minor legal cost	

Title: Cost and Benefits for the Collaboration between SCT Transport and Logent, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** September 2017

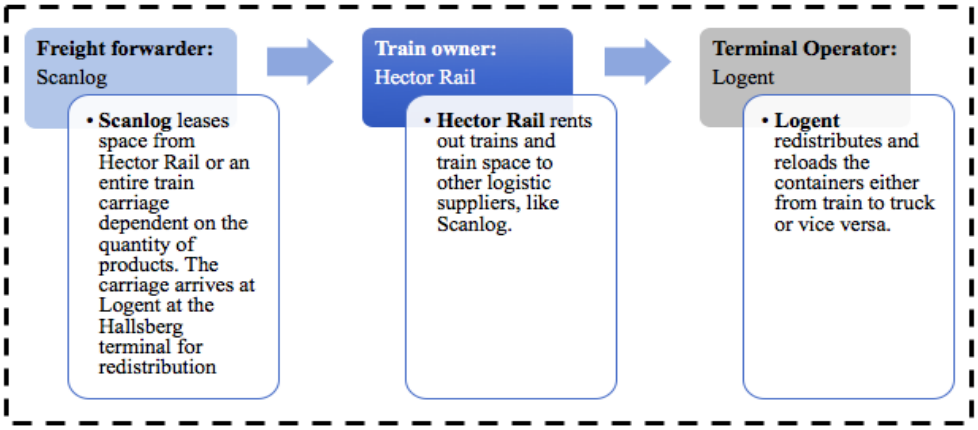
5.3 Collaboration 2.3 Logent and Scanlog

5.3.1 About Scanlog

Scanlog is a Swedish company that offers complete international freight forwarding and logistics solutions using all modes of transport: sea, air, road, rail, - both single and multimodal. They also offer tailored solutions for transport of intermediate goods and spare parts to the shipping and offshore industries. Scanlog's multimodal short sea and rail systems are specifically designed for imports of bulky products, retail goods, foodstuff and beverages from mainland Europe to Scandinavia.

The actors in collaboration 2.3:

- **Scanlog** (freight forwarder): Scanlog leases space from Hector Rail or an entire train carriage dependent on the quantity of the products. The carriage arrives at Logent at the Hallsberg terminal for redistribution.
- **Hector Rail** (train owner and train operator): Rents and operates trains and train space to other logistic suppliers, like Scanlog.
- **Logent** (terminal operator): Logent redistributes and reloads the containers based on the Scanlog's requirements.



Title: Supply Chain for Collaboration 2.3, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** October 2017

5.3.2 Reasons for collaborating

Logent is providing Scanlog with multimodal terminal services. The availability of multimodal terminals is limited in Southern Sweden and Hallsberg Terminal is the best option for Scanlog in terms of location and space. Logent has the required facilities and resources to manage Scanlog's diversified product portfolio and quantities of high volume.

5.3.3 Collaboration characteristics

Scanlog is one of Logent's biggest customers. The collaboration is based on tailored solutions that are co-developed by both parties. They are working together on finding a more efficient solution for repacking and reorganizing pallets and containers. Often pallets and containers are packed in such a way that they take up excess space. With better container packing, this space could be used and sold to other customers. The main reason for this inefficient packing is that the products being transported are fragile and therefore cannot be piled with more bulky products. Logent helps Scanlog with the repacking pallets or containers, including repacking containers from different customers that are delivered to the same end destination. Logent locates products that are heavy and solid and put these on the bottom of the pallet and the fragile products on the top. This optimizes the use of space resulting in lower transportation costs. The cost savings is split equally between Logent and Scanlog, which also provides an incentive for both partners to maintain an open dialogue and good collaboration. This example clearly illustrates the level of strategic involvement between the partners. However, there is no legal contract between the partners, it is merely an informal agreement that both partners are committed to work together in finding solutions that serve both by reducing costs and sharing the savings.

To sum up, the relationship between Logent and Scanlog can be defined as a **MoU** with an implicit strategic aspect based on the following characteristics:

- No legally binding agreement
- Strategic involvement between the partners
- Daily level of interaction between the partners
- Medium level of uncertainty

5.3.4 Collaboration challenges

One of the main challenges identified is that Sweden imports more than it exports, resulting in unbalanced transport and storing of empty containers. Scanlog and Logent are trying to find companies that have a great enough transport flow both

ways in order to prevent transporting and storing empty containers, which is a deficit business for both Scanlog and Logent.

5.3.5 Collaboration benefits

When collaborating on such initiatives, Scanlog and Logent are sharing knowledge. Scanlog is a multinational company providing all means of transport. They have a strong international profile, which Logent can benefit from. Logent is a national company with a very strong knowledge about the regional industry and partners. Another strong incentive is that the partners share the risk and benefits of their business, including cost savings by avoiding transportation of empty containers.

5.3.6 Future prospects and long-term goals

The collaboration between Scanlog and Logent holds attributes of a strategic partnership. The collaboration is dealing with idea generation and co-development that benefit both partners. Even though, Scanlog is a large international company, Logent's local knowledge and expertise on markets and customers are valuable. This is important to Scanlog, as a large part of Scanlog's business is in Sweden. In Sweden, Logent is operating one of the leading multimodal hubs, the Hallsberg Terminal. The success of the partnership is mainly due to shared goals and the sharing of cost savings in their collaboration. This creates a strong incentive for both partners to continue the collaboration and keep trying to find new and better solutions for their shared challenges.

Costs and benefits with this kind of collaboration;

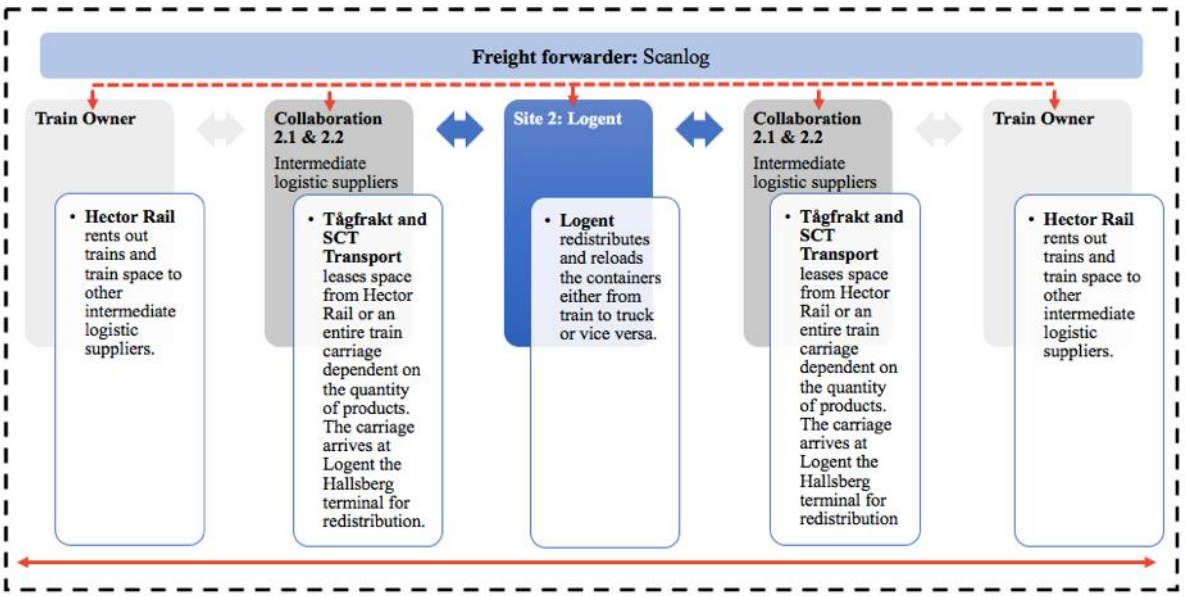
Benefits	Cost
Knowlege sharing => synergies/reduction of transaction cost	Need for continuous dialog and meetings => high transaction cost
Minimizing expenditures on legal advise and expert consultants => synergies => reduction in transaction cost	Risk of disruption/uncertainty => safe guarding => high transaction cost
Greater Customer Portfolio => revenue generating	
Exploitation of core competences => capacity bundling	
Greater risk sharing	
No contract => minor legal cost	

Title: Cost and Benefits for the Collaboration between Scanlog AB and Logent, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** September 2017

5.4 Conclusion on site 2

In today's global market, many transport companies face the challenge of increased competition and retiring prices. With a growing demand to keep prices and costs low, there is less room for making investments, including investing in partnerships. Strengthening dialogue and collaboration across the supply chain will allow the partners to make efficiency gains that can be translated to cost reductions, - without making large investments. Logent plays a central position in the supply chain ideal for connecting these independent operators through cross-supply chain collaboration on improved efficiency and cost reductions.

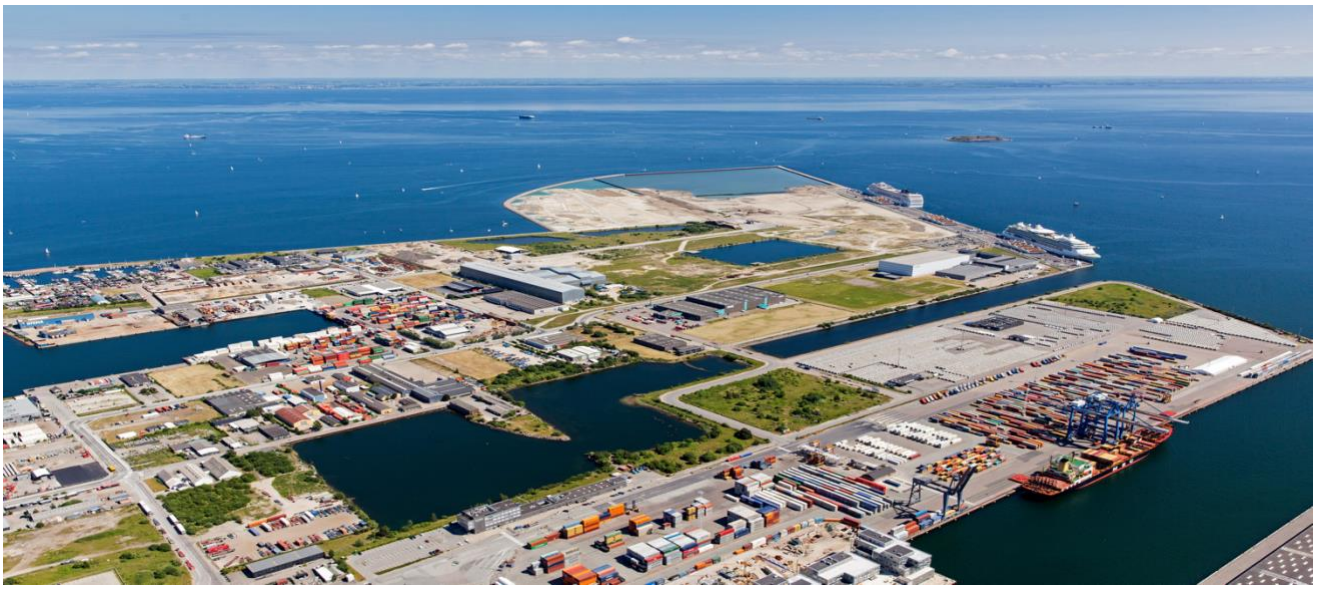
This case study focuses on the relationships, Logent has with some of their customers, including the unique characteristics of these relationships. Logent and its collaborators do not use formal contracts. The collaborations are mainly guided by transaction-based principles. However, due to the long-lasting collaboration between Logent and Tågfrakt, SCT Transport, and Scanlog, a foundation of trust has emerged in each of these collaborations. After studying these collaborations, it is evident that each relationship is defined by individual nodes in a more complex network of relationships across and between Logent and Tågfrakt, SCT Transport and Scanlog. If Logent chooses a more holistic approach to its collaborations, - rather than dealing with the disparate nodes in a fragmented manner, greater benefits can be accomplished. For instance, some of the cost benefits from the close collaboration between Logent and Scanlog can be applied and amplified across the other collaborations studied here; Tågfrakt, SCT Transport and Hector Rail. By aiming for more strategic collaborations, Logent and Tågfrakt, SCT Transport, Scanlog and Hector Rail can create a leaner process in the supply chain and avoid sub-optimisation, where one's gains are another's loss. The initial costs of closer dialogue and collaboration are off-set by the gains achieved through reducing slack and improving performance of the supply chain, including efficiency gains that lead to cost reductions, and bundled solutions that enable competitive offerings to customers and help open new market segments.



Title: Optimised Supply Chain for Logent and its customers, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** October 2017

Optimizing packing spaces and coordinating export and import freight, as discussed in this study, are concrete examples. Collaborating with partners that offer synergies allows the partners to build on their own and others' core competences and market access. The different transport companies can exchange their experiences on how to get transport quantities and infrastructure facilities attuned, deal with policy restrictions, legal compliance, environmental issues and many other challenges. Thereby, the partnership creates a network of knowledge sharing that contributes to a stronger and more powerful transport network. In short, each company is able to achieve more than if they were on their own. The future recommendation for Logent is to tighten the supply chain through close dialogue and collaboration in order to provide shared information on export and import transport and clients, and optimization of packing through a better understanding of packing and storing demand and supply and storing challenges.

6. Site 3: Copenhagen Malmø Port, Region Greater Copenhagen



Title: Picture of Copenhagen Malmø Port, **Source:** www.cmport.com, **Date:** October 2017

6.1 Collaboration 3.1 Copenhagen Malmø Port and Toyota

6.1.1 Reasons for collaborating

Since Copenhagen Malmø Port (CMP) was established in 2001, many new customers have emerged and new business relations have been created. The collaboration between CMP and Toyota is emblematic of a successful collaboration.

In 2002, Toyota contacted CMP to inquiry, if CMP would be interested in setting up a terminal for Toyota's operations in the Nordic countries. This was a great opportunity for the port, and CMP agreed to initiate dialogue and collaboration with Toyota. The contract with Toyota provides CMP with capital to make long term investment.

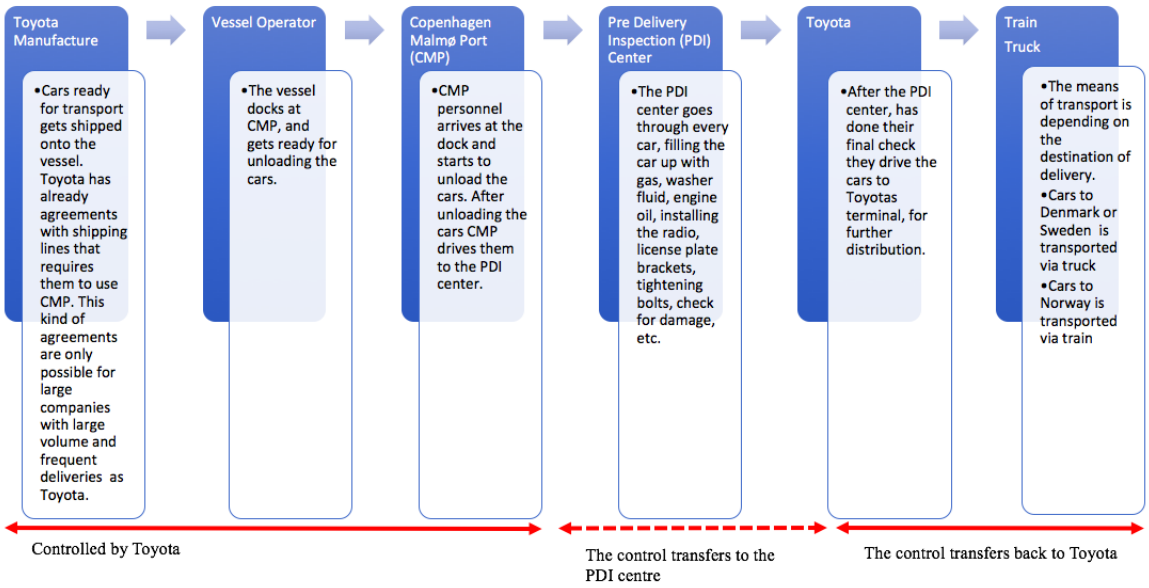
An entire area was cleared and reserved for the new Toyota terminal and facilities. With an already existing roll-on/roll off connection, the new docking area is better equipped at handling cars from ship to land and vice versa. The docking area was not only for Toyota activities. Other car manufactures are able to use the docking area, which creates a vibrant environment that allows add-on businesses, like pre delivery inspection (PDI) centres, to grow.

One of the main reasons, why Toyota chose to use CMP as their main port, was that they wanted to consolidate their sea transport to one single destination in the Nordic region. Previously, Toyota used 6-7 different ports to handle their car distribution in the Nordic region. These ports were located in Norway, Finland, Sweden and

Denmark. CMP and Toyota agreed that the terminal and docking area should be located in Malmø, since Malmø Port has the capacity and facilities required. Lastly, the Øresund Bridge was considered an important factor for choosing CMP, since cars could easily be transported from Malmø to Copenhagen.

6.1.2 Collaboration Characteristics

Toyota leases land and buildings from CMP. Both partners have signed a 25-year leasing contract. CMP handles the unloading of cars from the ships to the docking area and from the docking area to the Toyota terminal. CMP and Toyota is continuously in dialog on how to improve the handling of cars from the ships to the terminal docking and storage areas. They meet twice a year to discuss their collaboration, including areas of improvement and development. One central element for Toyota's operations in CMP is the location of Pre-Delivery Inspection (PDI) centres. PDI centres are responsible for ensuring that cars and other vehicles are in 100% perfect condition and ready for sale. One of the PDI centres was placed close to Toyotas terminal to ensure an efficient and effective handling process. Below is illustrated the supply chain for Toyota. The dotted line symbolises the passing of control from Toyota to the PDI centre.



Title: The Supply Chain for Toyota cars **Source:** Luise Noring and Julie Jo Nygaard, **Date:** November 2017

To sum up, the main business areas of CMP are:

- Leasing of land
- Handling of cars – loading/unloading/from the ships to the docking area (car-handling)
- Handling of regular freight –loading/unloading
- Selling train timeslots

6.1.3 Collaboration Challenges

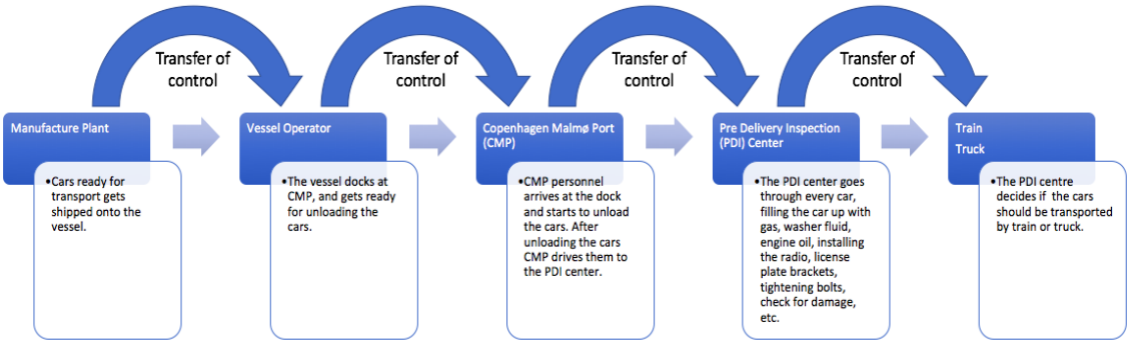
During the last couple of years, CMP has experienced increased competition, which enhances the need to keep customers, like Toyota, within their customer portfolio. CMP lost 87.000 car-handlings per year, when Toyota decided to build their own manufacturing plant in Russia. This meant a huge cut in the CMP profit.

The PDI centres were originally built to accommodate the vast influx of new business introduced by Toyota in 2002. Since then, Toyota has expanded its manufacturing capacity in Russia, which has led to a decline in business in CMP. Nevertheless, due to the large volume of car throughput in CMP and the subsequent establishment of PDI centres, many other car manufacturers decided to use CMP. This means that due to the original engagement of Toyota, PDI centres were established that were able to attract lots of other car manufacturers. Most of these other car manufacturers have stayed on, despite Toyota having scaled back on their business. The complexity and flux of the market mean that CMP has to keep on their marks. By engaging in continuous dialogue and collaboration with other car manufacturers operating in the port, they hope to continue to offer competitive solutions, such as the PDI centres.

The PDI centres recommend how the cars should continue their journey to final destination. In the cases that the centres recommend the on-going journey to happen via truck, this leads to diminishing business for CMP. In contrast, if the on-going journey is by ship, CMP stays in charge of the transport, including docking and storage.

In this way, the PDI centres have a decisive impact on the mode used for transporting the cars to their next delivery point. Usually, PDI centres sign a 7-12 years leasing contract with CMP. However, the PDI centres only share the total number of known orders one year in advance, which makes long-term planning beyond one-year problematic for CMP.
A simplified version of the supply chain of a car manufacture is presented in the figure below. As shown, the control and administration of the cars has been transferred to the next link in the supply chain. However, a large manufacture, such

as Toyota, generally controls the majority planning and administration across their supply chain, while small and independent car manufactures do generally not have the same executive power. The below figure illustrates the supply chain for a small-scale car manufacture.



In general the supply chain of car manufactures are very fragmented and de-centralized. The control of the supply chain is being transferred to the next link in the supply chain.

Title: Simplified Supply Chain for Car Manufactures **Source:** Luise Noring and Julie Jo Nygaard, **Date:** November 2017

Transporting cars by train is profitable, when there is a certain volume. At smaller volumes, trucks are preferable. Toyota is using trucks when transporting to Denmark, Sweden and Finland, while all transport to Norway is done by train. One of the reasons why Toyota and other car manufactures often use trucks instead of trains to transport their cars is due to the different standards of trains across Europe. Different train standards, such as breaking standards, electricity standards, and different length of rails are but a few examples of the challenges resulting in a very inefficient train transport in Europe and translating to additional operating costs for train operators and their customers. Every time a company chooses to use rail transport, it accumulates extra tasks that increase the handling costs. To give an example, every time a container has to be loaded or unloaded onto another train, it amounts to an addition of 100 euros per container in handling cost.

6.1.4 Solving these challenges

CMP is aware of the importance of maintaining good client relations with Toyota. Without Toyota's delivery volume and frequency, other car manufactures piggybacking on Toyota by using the same shipping routes and vessels as Toyota,

would experience a declining service at CMP. This may, in turn, make them consider other transport options.

In order to maintain good client relations, CMP regularly pays informal visits to Toyota, where CMP proactively seeks to understand and accommodate the needs and wishes of Toyota. As an example of this, Toyota requested a better port infrastructure for both deep-sea and short-sea ships, which is why CMP expanded its current infrastructure in 2002. CMP invested 30 million DDK in building new port facilities. This investment also met the requests made by the PDI centres. In meeting the demands of the PDI centres, CMP recognizes that they offer important services to the car manufacturers.

6.1.5 Collaboration benefits

Due to the scale of investments, CMP is dependent on long-term investment planning. Such long-term planning is more achievable in an environment of frequent and open dialogue. Since 2002, when Toyota consolidated all its Nordic port operations to CMP, CMP has conducted several investments to improve car handling in Malmø Port. As a consequence of the high frequency and volume of cars delivered every day in the Port of Malmø, a number of other car manufactures have consolidated their transport deliveries in Malmø Port as well. Being able to forecast long-term investments is an important aspect of staying competitive. In order to predict the most appropriate long-term investments, CMP engages in close dialogue and collaboration with Toyota and the other car manufacturers.

6.1.6 Future prospects and long-term goals

The construction of Øresund Bridge led to an immediate decrease in the two ports' cargo turnover and passenger traffic. It is estimated that the bridge has decreased port activities by 25%. However, the Øresund Bridge also opened new opportunities for collaborating across the two ports on transport and logistics. A combination of ship/train/truck simplifies distribution across the Nordics saving time and money. However, rail transport in the Nordics and Europe as a whole is still lacking in efficiency due to the lack of compatibility across the different countries' unique standards. Therefore, the cost of using rail transport is much higher than using trucks. When changing to a new national rail line with different standards transportation costs are accumulated. In addition, most cargo must go by truck the last mile of transport. Therefore, by shifting directly from ship to truck, the transport operator can eliminate one step in the process. In order for rail transport to become more competitive, it has to become more interoperable to use. A first step would be to develop coherent and equivalent standards for rail transport across the Nordics.

Next step would be to have a coherent and similar system coordinating and uniting timeslots for all tracks and rails across the Nordics.

The collaboration between Toyota and CMP is well-functioning and successful. However, CMP must stay alert of the competing market trends that could diminish its business. In relation to the smaller car manufacturers using Malmø Port, the PDI centres have acquired substantial power through information. In relation to CMP, the PDI centres are in a strong position, as they determine further transportation of the cars. If the PDI centres recommend trucks, CMP foregoes on a potential business opportunity. CMP can impact decisions towards using trains instead of trucks by bundling orders and creating better facilities for trains at CMP. However, the issue of non-conformance of cross-national standards on European rail remains unsolved. Hence, common train and rail standards across Europe would improve the efficiency of train transport making it more favourable for companies to use train.

Costs and benefits with this kind of collaboration;

Benefits	Cost
Information sharing => increase efficiency	Continuous dialog with Toyota to ensure future collaboration => increasing transaction cost
Synchronizing of activities => increase efficiency	Continuous dialog with PDI centers => increasing transaction cost
Economies of scale	Political challenges => common European standards for train rails across Europe
High frequency deliveries	Risk of disruption => safe guarding => high transaction cost
Piggy back => other car manufactures has joined CMP because the can use the same facilities as Toyota	lack of information about the actual orders => difficult to plan long-term

Title: Cost and Benefits for the Collaboration between Copenhagen Malmø Port and Toyota, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** September 2017

7. Site 4: Skånetrafiken, Region Skåne

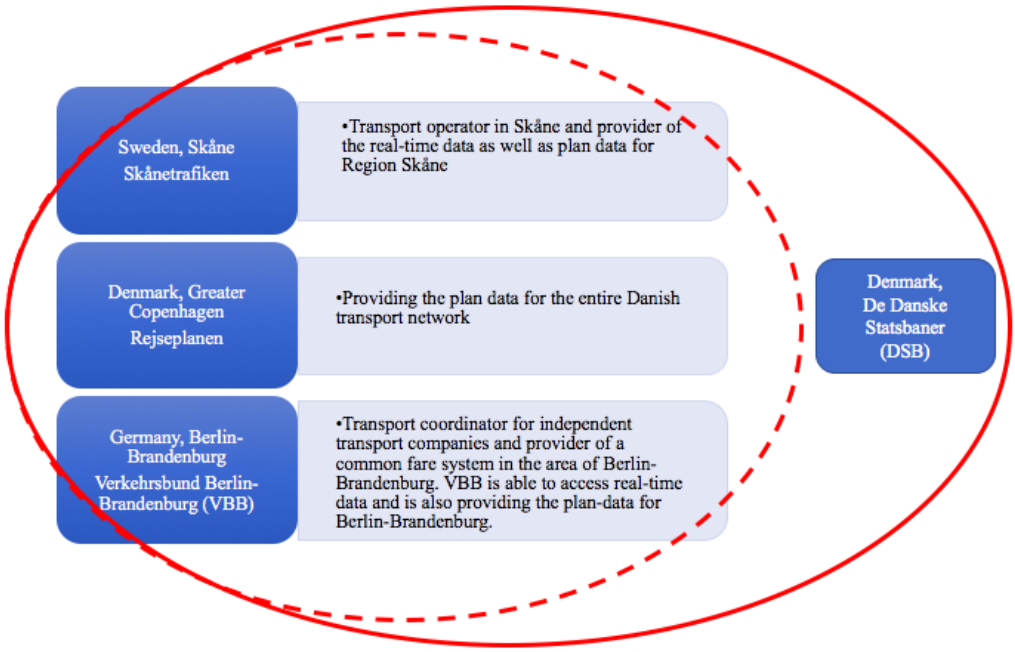
Title: Picture of the Øresundståg, **Source:** www.b.dk, **Date:** November 2017

Skånetrafiken manages train services in the region of Skåne, called PågaTåg. Currently, PågaTåg is operated by Arriva (under contract with Skånetrafiken). In addition to the PågaTåg trains, Skånetrafiken manages the Øresund trains, as a cross-border collaboration between SJ on the Swedish side and their Danish counterpart DSB on the Danish side. In short, Skånetrafiken is responsible for public transport in the Skåne Region accounting for more than 164 million trips annually in the region and across Øresund to Denmark.

For many years, Skånetrafiken tried to improve the public transport network by developing and implementing solutions, such as the Jojo travel card. The Jojo travel card is a debit travel pass that commuters purchase. The card provides them with unlimited access and usage to public transport in the pre-chosen zones for a 30-day travel period. The Jojo card is purchased on stations or on-line on Skånetrafiken's website. Currently, Skånetrafiken is working on an app, where commuters can buy tickets and renew their travel pass via the app making it more convenient to travel by train.

7.1 Collaboration 4.1 between Skånetrafiken, Rejseplanen and Verkehrsbund Berlin-Brandenburgh in Scandria®2Act

This collaboration is part of an EU funded project called the Scandria®2Act project. In the figure below all partners participating in the collaboration are illustrated. Importantly, De Danske Statsbaner (DSB) are not an official partner in the Scandria®2Act project but are represented via the Capital Region of Denmark, Centre for Regional Development who is an associated partner in the project.



Title: The formation of the collaboration as part of the Scandria®2Act project, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** November 2017

7.1.1 Reasons for collaborating

This collaboration builds on the already existing EU travel planning system coined the EU-Spirit project. The EU-Spirit project was developed at the beginning of the establishment of the Øresund Bridge. Hence, the EU-Spirit project ran from 1998 until 2001 and was the first joint initiative in the collaboration between Skånetrafiken, Rejseplanen and Verkehrsbund Berlin-Brandenburg. All three collaborators are partners in the Scandria®2Act project and Skånetrafiken is leading the project collaboration.

The main reason for the collaboration is to improve the transport information service across the borders in Europe. One objective is to deliver real-time information on disruptions on the stretch between the metropolitan areas of Berlin-Brandenburg and the Øresund Region, also called Region of Greater Copenhagen. The second objective is to jointly develop an app for cross-border ticketing, making it more convenient for people to travel by train across the Danish, Swedish and German borders.

To sum up, the main objectives of this collaboration are:

1) Combine real time data across borders
2) Create a cross-border ticketing system

Both objectives will be merged into on app. The current app is just a prototype and only available for commuters in the Skåne region. The next step will be to launch the app in Greater Copenhagen and beyond.

7.1.2 Collaboration characteristics

This is not a typical business collaboration. Scandria®2Act is based on an EU initiative to improve the travel corridors in Europe. All three partners are receiving funding from the EU and have signed a contract committing them to produce specific deliverables.

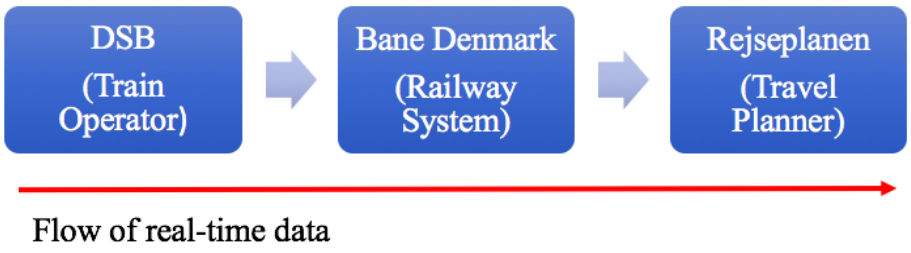
The collaboration between the partners is **highly strategic** and involves stakeholders from Skåne, Berlin-Brandenburg and Greater Copenhagen. The partners meet every six months to present the current status of the collaboration to the rest of the Scandria®2Act consortium. In addition, the partners often meet independently of the official meetings to discuss progress and potential issues.

7.1.3 Challenges in collaboration

One of the main challenges is that it is difficult to get the required information to create a platform where real-time data can be stored and exchanged. Currently, users only see real-time data through the local planning apps: the Danish travel app Rejseplanen, or Skånetrafiken's Pendlerklubben Kystbanen. The cross-border app is still not available. The means that commuters have to use up-to three apps, when purchasing tickets from Sweden to Denmark to Germany.

The Danish travel system is divided into separate entities managing different functions. DSB is in charge of the ticketing and fees. Bane Denmark operates the

railway system and is main responsible for maintaining the tracks while Rejseplanen represents the Danish travel planning system.



Title: The Danish Train Transport System, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** December 2017

The problem is that Rejseplanen, who is a partner in the Scandria®2Act project, is not authorised to issue tickets. Only DSB has that authorisation. However, as DSB is represented as an associated and not as an official partner in the project, this creates obstacles for the development and implementation of a joint app between the two countries. In this case the new online ticket purchasing system has to be approved and accepted by DSB before implementation. This issue is still under negotiation.

Another issue, that creates confusion for the users of travel planning systems, is that not all cities and towns are included.

Since the app will be using the already available data from the web version, this will mean that the app will mirror these limitations. The reason is that the countries have very different travel planning data and systems. The data and systems are not always compatible across borders. Furthermore, the partners are required to continue working on the app for future improvements.

To sum up, the main challenges with the new cross border transport app are:

- No joint interface to share real-time data, which means that users have to use up to several apps to see eventual delays or cancellations.
- No standard cross-border online ticket system. Travellers have to purchase independent tickets via each country's travel planning app.
- Not all cities and towns are included in the travel planning system, creating confusion and frustration amongst the users.
- Continuously monitoring the app in practice.

7.1.4 Solving these challenges:

The partners recognise that combine travel information and standardising ticketing across Sweden, Denmark and Germany would help increase cross-border transit. However, the challenges seem unsurmountable. Through continuous dialogue and frequent meetings, the partners are trying to work on solutions that meet the requirements from different stakeholders such as passengers, transport authorities, transport providers, and travel planners. The partners use the already established interphases developed in the EU-Spirit project. This helps them overcome some of the challenges.

Currently only Skånetrafiken has implemented the cross-border app. However, the app is still in its early phase. One of the things being incorporated is real-time data from Denmark and Germany's travel planners. The next step is to ensure that everyone agrees on the same ticket standard.

7.1.5 Collaboration benefits

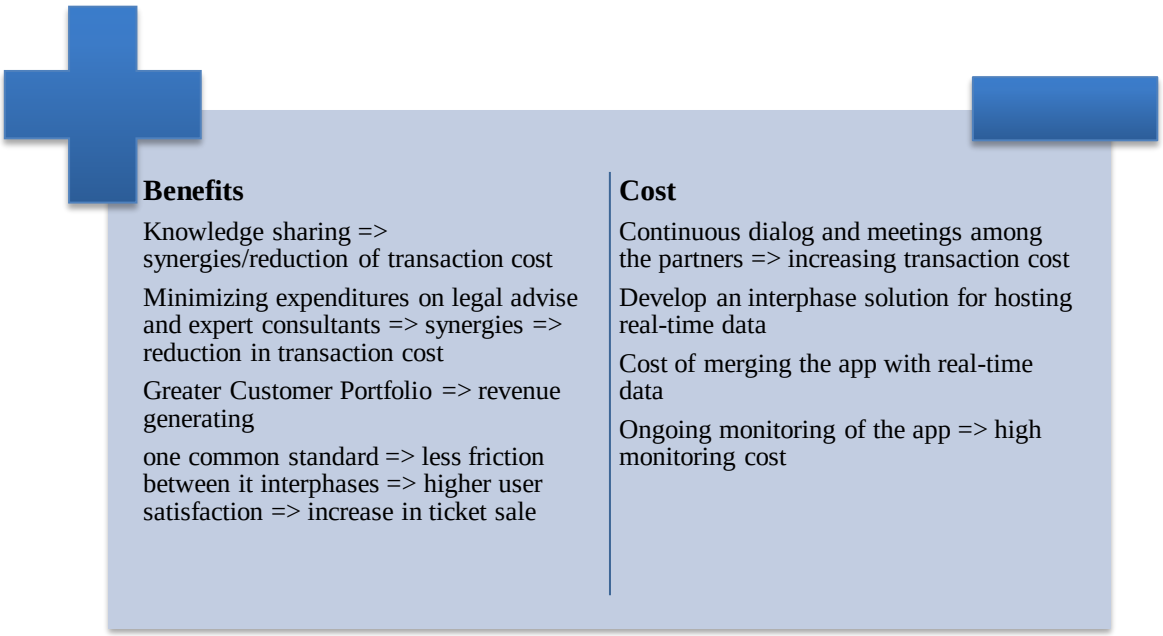
By collaborating, the partners share knowledge and experience. By being part of the project the partners can learn from experts across the project. Additionally, the partners gain a better idea of the travel patterns across Europe and on how to address cross-borders issues. The development of an app with real-time data helps commuters save time and resources. The partners are hoping that this will increase ticket sales. Currently there are four times as many searches on the Skånetrafiken's travel app than on their web solution. People prefer to use the app rather than searching on the internet because the app is much easier and faster. *"People are in the app-world not in the web-world"* (Krister Nordland, Skånetrafiken, October 2017) Furthermore, the creation of an app that is authorized in Sweden, Denmark and Germany expands the customer base.

7.1.6 Future prospects and Long-term goals

The current app is still a prototype only available in the Skåne region. The next step is to launch a pilot of the mobile app in Greater Copenhagen with the help from Rejseplanen and with DSB. There is still a long way to go and not all partners are as engaged in the implementation of the app as Skånetrafiken. What might seem as a great and beneficial idea in theory might not work as well in practice. In Germany, they have agreed on following the development of the prototype app, before making the final step of implementing the app.

The outcome of the implementation of the prototype app in both Denmark and Germany will hopefully, lead to other partners joining the project. The hope is that by creating a successful app and collaboration, other countries will follow resulting in a

stronger commitment to create a common standard for train transport and ticketing across Europe.



Title: Cost and Benefits for the Collaboration between Skånetrafiken, Rejseplanen and Verkehrsbund Berlin-Brandenburg, **Source:** Luise Noring and Julie Jo Nygaard, **Date:** September 2017

8 Part 3, Main Conclusion and Recommendations

To sum up, many of the challenges in the multimodal sector is due to the very complex and silo divided train and railway system across Europe. Different standards for rail tracks, train systems create huge barriers for creating efficient and effective multimodal business models. Train transport has to become more efficient in order for companies to use it.

An important factor in dealing with multimodal business models is that by combining modes of transport, another link is added to the supply chain. By adding an extra link means extra cost. This extra cost can be linked to the handling cost when unloading

and loading containers or pallets with products. This requires time, personnel and requires the right equipment, -all of which adds additional cost. In order for companies to use train transport rather than trucks, there must be incentive of cost reductions. Most companies have to use trucks for the last mile. By adding another link (e.g., trains), the economic upside of multimodal transport must be clear. Business focus on saving money and increasing profit. The four sites examined in this report represent companies and organisations that are trying to improve multimodal transport. The most feasible way of reducing costs and improving profits are for companies to create synergies and economies of scale making their supply chain more efficient.

Logent takes a central position in the supply chain ideal for connecting companies across the supply chain for optimisation and cost reductions. Collaboration on a joint transport network leads to a multimodal business modal enabling bundled solutions that are in a stronger position to compete against the single offers business models.

Copenhagen & Malmø Ports and Toyota detected a market niche that enables continuously improvement of their core competences. These improvements encouraged other car manufactures to use CMP's facilities. The advanced port facilities required by Toyota cross-serve other car manufactures. CMP knows the importance of continuously strengthening its position as a leading port for the car industry. A core element in CMP's business strategy is to maintain a regular dialogue with their customers. CMP illustrates that sometimes ports have to look beyond the regular business norms of collaborations in order to become more competitive.

A collaboration between **Hamburg Port Authority** and some of their customers enabled the development of Smartports, an IT-system with common standards and interfaces. Smartports helps manage traffic and container flows, reducing the handling time and costs, and storing of empty containers. By reducing the number of containers in the port, Smartports is freeing up space creating new areas of investments to improve the port's efficiency.

Lastly, the horizontal collaboration between **Skånetrafiken, Rejseplanen and VBB** is another example of an IT-solution developed to improve the efficiency through cross-border sharing of information and ticketing. This is strengthening the partners' market position by enabling commuters to get from A to B within the shortest period of time and at the lowest price. If successful in the collaboration between Skånetrafiken, Rejseplanen and VBB, functionality of the real app can be transferred to train freight. Today, however, both passenger and freight transport systems are complex and bureaucratic, as common standards across boarders do not exist.

Annexes

Overview of site 1 collaborations

Site 1 Hamburg Port Authority (HPA)	Terminal operators (collaboration 1.1)	Smartports – packing and stuffing operators (collaboration 1.2)	Smartports – IBM (collaboration 1.2)	Elbeseaports (collaboration 1.3)
Case objective	HPA operates as the port manager and leases out the port-land	Increase the port efficiency in terms of container handling.	Increase the port efficiency in terms of container handling.	Strengthening the global competitiveness of Lower Elbe Region.
Collaborators	Private companies, “Tenants”	Private companies, “Packing operators”	Private company, IBM	Private/Public ownership, Brunsbüttel, Cuxhaven, Glückstadt, and Stade
Advantages	Standardised tendering processes Low level of monitoring cost, due to contractual safeguarding	Increased efficiency – reduction in driver expenses and more efficient use of land Knowledge and information sharing Synchronising of activities Less delay due to fewer bottlenecks Higher customer satisfaction through fewer mistakes and improved customer responsiveness	Low level of monitoring cost due to contractual safeguarding Benefit from expert skills and knowledge IT-system that shows real-time transport flow in the port	knowledge and information sharing Centralised marketing department, creating synergies across the actors Sharing of risk

Challenges	Uncertainty in terms of predicting market demands for port infrastructure	Overcoming the resistance experienced from the stuffing and packing companies Political challenges	Finding the right developer How to commercialise the software tool	Maintaining a good and positive dialog Prevent opportunistic behaviour

Overview of site 2 collaborations

Site 2 Logent	Tågfrakt (collaboration 2.1)	SCT Transport (collaboration 2.2)	Scanlog (collaboration 2.3)
Case objective	Terminal management National railway-logistics	Container handling and transport National truck and rail transport	International freight forwarding and logistics solutions for transport
Collaborators	Private companies, Logent SCT Transport Hector Rail	Private companies, Logent Tågfrakt Hector Rail	Private company, Logent
Advantages	Small and agile that generates a level of flexibility and adaptability. Considerable knowledge about the logistic system in Sweden	Daily interaction has created a foundation of trust between Logent & SCT Transport. Considerable knowledge about the logistic system in Sweden. The collaboration between SCT Transport, Tågfrakt & Hector Rail creates a strong link to one of the biggest ports in Sweden the Port of Gothenburg	Strong international profile Sharing of risk and benefits

Challenges	Bring in long term contracts Acquire customers with good of significant volume that need to be transported for a considerable distance on a regular basis Vulnerable to market fluctuations and economic shifts	Acquire customers with goods of significant volume that need to be transported for a considerable distance on a regular basis without compromising the price Trust	Importing more than they export creating an uneven transport pattern resulting in empty container handling.

Overview of site 3 collaboration

Site 3 **Copenhagen Malmø Port (CMP)**	**CMP and Toyota (collaboration 3.1)**
Case objective	Centralising of port activities
Collaborators	Private company, Toyota
Advantages	Long-term investment The contract with Toyota strengthens CMP's market position and core competence An increased influx from other car manufactures
Challenges	Maintaining an environment that accommodates the needs and requirements for car manufactures such as Toyota To keep improving the port's efficiency – which often demands a certain volume Lack of control in the supply chain

Overview of site 4 collaboration

Site 4 **Skånetrafiken**	**Collaboration between Skånetrafiken, Rejseplanen and Verkehrsbund Berlin-Brandenburgh in Scandria (collaboration 4.1)**

Case objective	Improving public transport across borders
Collaborators	Public regional institutions
Advantages	Knowledge and idea sharing Sharing risk and benefits Increase the use of public transport across borders
Challenges	Gain access to real-time data Inconsistent and incompatible travel planning systems Resource demanding