MASTER THESIS

Analysis of main factors in site selection for distribution centres in a port area and the hinterland

June 22nd, 2015
Graduate student: D. (Daphne) Kerpel BSc. – studentnumber 4018400

Master Transport, Infrastructure and Logistics (TIL)

Delft University of Technology

Graduation chair: Prof. dr. R.A. (Rob) Zuidwijk

Section Transport & Planning

Faculty of Civil Engineering and Geosciences

Delft University of Technology

Weekly coach: Dr. J.M. (Jaap) Vleugel

Section Transport & Planning

Faculty of Civil Engineering and Geosciences

Delft University of Technology

External reader: Dr. J.H.R. (Ron) van Duin

Section Transport & Logistics

Faculty of Technology, Policy and Management

Delft University of Technology

External committee member: dhr. N. (Niek) Ooijevaar

Business manager Breakbulk

Port of Rotterdam

June 22nd, 2015
Preface

You are about to read the report about the research I have done to finish my master’s degree in Transport, Infrastructure and Logistics at Delft, University of Technology. In the period I have been working on this report, several people have been of added value for me. I would like to thank them before you start reading my thesis.

First of all I would like to thank some people from TU Delft. In particular, I would like to thank dr. Jaap Vleugel who was my weekly coach. Jaap guided me the entire period and he really showed engagement by always being interested in my work. It was a pleasure to work together with Jaap and I appreciated his personal way of coaching. Besides Jaap, I would like to thank prof. dr. Rob Zuidwijk for giving me the opportunity to write my graduation thesis and dr. Ron van Duin for his involvement in the research. During the start of the research Behzad Behdani was involved in the research, I would like to thank him for his critical questions that brought my work to a higher level.

In addition, I would like to thank several people who are working at Port of Rotterdam. I would like to thank Niek Ooijevaar for his participation in this research. He has always been more than willing to support me. Later, his colleague Sofie Tolk involved herself in the project. I would like to thank Sofie for reviewing my work and brainstorming about the next steps in the process.

Being in an environment with people that were in a similar situation was very valuable for me; therefore I would like to thank the students in the graduation room for surrounding me.

My friends, relatives and acquaintances made it sometimes possible focus on something else then my thesis or sometimes they listened and our conversations led to new inspiration. I would like to thank them for their support.

I would like to thank all the interviewees. They took more time for me than I initially asked and it was great to see their enthusiasm about the topic of my research.

It is inexpressible in words how much I would like to thank my family. My mom, dad and sister Chantal are priceless. They supported me through my entire studies. From the moment I considered to start studying they have always been my solid rock.

I hope you will enjoy reading my thesis.

Daphne Kerpel

Delft, June 22nd, 2015
Summary

Introduction

The port of Rotterdam is facing competition. This competition is two-sided. On the one hand, the port of Rotterdam is competing with other ports in the area. On the other hand, the area of the port of Rotterdam as a logistic hotspot is competing with other logistic hotspots in the Netherlands. The authority of the port of Rotterdam is Port of Rotterdam (with a capital P not to confuse with port of Rotterdam with a lowercase p, which is the physical port itself), hereafter called PoR, has the goal to maintain the competitive position of the port of Rotterdam.

The land designated for distribution centres is almost completely in use. It might be that this situation will change. Parties that are not strictly related to port areas probably decide to (re-)locate their distribution centre at a more inland location. So it is very interesting to know which parties are dependent of the port to keep these parties within the port of Rotterdam area and prevent that they will establish at a competing port.

Since that are the parties PoR should prefer, PoR should prevent parties that are not port-dependent to establish within the port area since they occupy space that could also be used by port-dependent parties. PoR is currently focusing on the segments dangerous goods (hereafter called ADR), food and consumer goods and they would like to know whether this focus is the right one, how they can be more active in acquiring companies within those segments and how they can be more attractive for companies to establish.

A final decision for a location for a distribution centre will be based on several factors. These factors may be based on criteria for a certain location as well as context factors and decision making factors. It is therefore of interest to have profound insight in the context of the decision making process and the involvement of the parties in this process.

The problem statement of the research in this report will thus be:

*How can PoR ensure that the land for distribution centres will be well filled in a way that it keeps generating and binding cargo flows to the port?*

The function of PoR is to facilitate companies in the port of Rotterdam. The facilities regarding distribution centres should be satisfying for companies that want to select a
location for a distribution centre. The objective of this research is to give PoR a clear advice on how the facilities should be regarding land allocation, information supply and acquisition strategy in a way that it is satisfying for the companies that can distribute goods via the port of Rotterdam. Cargo flows can also be bound to the port by distribution centres at inland locations of which the goods will be transported via the port of Rotterdam. Cooperation between PoR and hinterland locations will be taken into account in this research as well.

Methodology, theory and conceptual framework

In the study described in this research, a holistic view needs to be obtained. Case study research is applicable to gain a holistic view and therefore this method is chosen.

From theory about criteria in site selection, the criteria in location selection aggregated for further analysis are the following:

- Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour.

Since a more holistic view concerning decisions about location choice is of interest, the context will be outlined in which these factors are of importance. This forms a conceptual framework about site selection for distribution centres. The conceptual framework is represented and described on the next page.
This conceptual framework describes three stages in decision making. The first phase is the demand phase in which the emphasis is on the problem. Due to demand for capacity or expansion capability or changes in the supply chain, demand for a distribution centre arises. The second phase is the search phase in which several options will be examined according the criteria already mentioned. The third phase is the final decision. In this phase, one of the options will be chosen based on knowledge about the factors.

According to the conceptual framework a central hypothesis and propositions have been developed. The central hypothesis is:

*Users of distribution centres can be attracted by playing a more active role in acquisition and by improving the information supply about ‘costs for land, operation and transportation’, ‘presence of other companies’, ‘infrastructure and geo location’, ‘distance to origin of the company’, ‘availability of land and possibility to expand’, ‘safety’, ‘government and investment conditions’, economy and market size’ and ‘availability, quality and costs of labour’.*

The related propositions that will be evaluated during case study research are the following:

- Companies are in demand of a distribution centre because they are in need for capacity, they want to have expansion capability or there are changes in the supply chain.
• When a company is aware of the demand of a distribution centre, they will start looking for different (locations for) distribution centres on basis of intermediating companies.

• The considerations for the different (locations for) distribution centres will be made on basis of the following criteria:
  o Costs for land, operation and transportation
  o Presence of other companies
  o Infrastructure and geo location
  o Distance to origin of the company
  o Availability of land and possibility to expand
  o Safety
  o Government and investment conditions
  o Economy and market size
  o Availability, quality and costs of labour

• When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about criteria.

Problem analysis

For PoR, it is important that a distribution centre adds to the revenues from rents and port fees. To optimise the distribution in the port and the region around the port, PoR developed the document Distrivisie Rotterdam. The aim of this document is to bind cargo flows to the port of Rotterdam. Distrivisie Rotterdam consist of an approach on three levels:

1. Optimising areas for distribution centres within the port industrial complex
2. Connection with distribution locations within region Rotterdam
3. Binding cargo flows with the hinterland

Although PoR mentions the binding of cargo flows with the hinterland, PoR is a bit hesitant to refer companies that are looking for a distribution centre to an inland location because they are anxious that cargo flows will go through another port.

PoR used to be quite reactive, but among other actions, the following actions have been / will be taken according to Distrivisie Rotterdam:
• Developing a shortlist of ADR customers in the region of Rotterdam and approach them to attract them and let them settle within the port of Rotterdam.
• Involving brokers more in case of possible customers who consider establishment within the port of Rotterdam.
• Developing a list of contact information from people at regional parties or development organisations of areas of distribution centres.
• Developing a commercial presentation about Distribution.

Interviews have been done with parties that are main players within the port of Rotterdam and which are have been involved in site selection for a distribution centre recently have been interviewed. Since the focus of PoR is on ADR, food and consumer goods, parties from these sectors have been selected. Besides that a parties that are active in national/regional acquisition and parties active at other locations than within the port of Rotterdam are interesting for an interview since this can give an indication on why a company will select a location which is not within the port of Rotterdam. The parties that have been selected for an interview according to these demands are Kloosterboer, Neele-VAT logistics, Crocs, Pro Delta, Dudok Vastgoed, Borghese Logistics, NDL (hereafter called Nederland Distributieland), Brabantse Ontwikkelings Maatschappij (hereafter called BOM) and Binnenvaart Terminal Tilburg (hereafter called Binnenvaart Terminal Tilburg).

With information gained from the interviews, the propositions that have been mentioned earlier can be evaluated. The propositions and related evaluations are described below.

First proposition: Companies are in demand of a distribution centre because they are in need for capacity, they want to have expansion capability or there are changes in the supply chain.

Evaluation first proposition: From the information from the interviews, it becomes clear that need for capacity, demand for expansion capability and changes in the supply chain are plausible reasons why a company will start looking for a distribution centre.

Second proposition: When a company is aware of the demand of a distribution centre, they will start looking for different (locations for) distribution centres on basis of intermediating companies.
Evaluation second proposition: From the information for the interviews, this proposition seems to be reasonable and can be supplemented with the effects of intermediating companies on the selection of a location for a distribution centre. The interviews show that it is very intangible how the contacts are established between the party that is looking for (a location for) a distribution centre and the intermediating companies. Besides that, intermediating companies have their own vision. These visions are not necessarily the visions of the customers and it is not applicable to every specific customer. Next to that, they have interests additional to the interests of the customer. After analysing the formal relations between all actors involved, it becomes likely that PoR becomes informed about location selection of a company when the considerations about the different options have been done.

Third proposition: The considerations for different locations for distribution centres will be made on basis of the following criteria:

- Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour

Evaluation third proposition: Multiple criteria are important in location selection. The relative importance depends and it is of the combination of factors that is of importance. ‘Costs for land, operation and transportation’, ‘presence of other companies’, ‘infrastructure and geo location’ and ‘availability, quality and costs of labour’ are taken into account by the majority of companies that are looking for a location for a distribution centre. Those are the most important criteria. The other criteria might be taken into consideration.

Fourth proposition: When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about the criteria.
Evaluation of the fourth proposition: It appears that final decisions will be made on what is known. If this fits the demand for a distribution centre, they select this location. Although there might be other suitable locations.

The conceptual framework can be adapted based on the findings that the intermediating companies influence the process with own interests, the criteria that are of major importance and the knowledge of important criteria for options in the demand phase. This will look as follows:

Figure B: Adapted conceptual framework

The central hypothesis was:

*Users of distribution centres can be attracted by playing a more active role in acquisition and by improving the information supply about ‘costs for land, operation and transportation’, ‘presence of other companies’, ‘infrastructure and geo location’, ‘distance to origin of the company’, ‘availability of land and possibility to expand’, ‘safety’, ‘government and investment conditions’, economy and market size’ and ‘availability, quality and costs of labour’.*

From the case studies, it can be concluded that companies are aware about what is of importance for them. ‘Costs for land, operation and transportation, ‘presence of other
companies’, ‘infrastructure’ and ‘availability, quality and costs of labour’ are of major importance. It is very important that parties that are looking for a distribution centre can find information about these criteria.

Conclusions

Two general conclusions can be made. The first general conclusion that can be made from this research is that the combination of criteria in site selection is of importance and the value of one criteria influences the other. The combination of criteria is not necessarily the total value of all criteria. The second general conclusion is that criteria in site selection have been put in the context of decision making and according to this research it is plausible that the role of intermediating parties is relevant in site selection and affects the final decision.

The problem statement is:

**How can PoR ensure that the land for distribution centres will be well filled in a way that it keeps generating and binding cargo flows to the port?**

PoR can ensure that the land for distribution centres will be well filled in a way that it keeps generating and binding cargo flows to the port. The major criteria are ‘costs for land, operations and transportation’, ‘availability, quality and costs of labour’, ‘infrastructure and geo location’ and ‘presence of other companies’. PoR has to emphasize what the quality of a distribution centre is within the port of Rotterdam based on these criteria for the specific customer.

From the case studies can also be concluded that PoR does not play a central role in the network of parties involved in location selection. Parties get their information from this network by their relations and contacts. If PoR wants to know which companies are looking for a distribution centre (and thus in need for information) they should have more relations and contacts with other parties in the network to ensure that the parties which are looking for a distribution centre will be provided with information about a site for a distribution within the port of Rotterdam.

Advice

PoR has to carry out the characteristics of the port of Rotterdam actively based on the important criteria as identified in this research. They need to make sure that companies that are looking for a distribution centre can find information about the port of
Rotterdam. So PoR has to present this information at expositions, via the website, but also inform the logistic service providers, real estate companies, owners of the distribution centres, consultancy companies and acquisition companies very well about their vision on how to be of added value for the customer.

In case PoR wants to actively provide a prospective customer with this information, PoR needs to have a better relationship with the national acquisition parties who are directly in contact with companies that might be willing to locate in The Netherlands.

PoR is currently focusing on ADR, food and consumer goods. In the future, distribution centres for consumer goods will be more inland because of the trend in e-commerce. The interest in the port of Rotterdam will diminish. PoR should mainly focus on ADR and food.

PoR should become aware about the existing knowledge about competition between ports related to hinterland locations and the extent to which they distinguish themselves from competing ports herein. Based on this, the anxiety that cargo flows will go via another port will turn out to be well-founded or unfounded. In case the anxiety appears to be well-founded, advise can be given what should be done to distinguish the port of Rotterdam from other ports to attract more cargo flows related to distribution centres in the hinterland. In case the anxiety appears to be unfounded, advise can be given how PoR should profile itself to attract cargo flows related to the distribution centres in the hinterland.
# Contents

1 Introduction .............................................................................................................................................. 1  
   1.1 Background .................................................................................................................................. 1  
   1.2 Problem statement ....................................................................................................................... 3  
   1.3 Research questions .................................................................................................................... 4  
   1.4 Research objective ..................................................................................................................... 4  
   1.5 Methods & overview of the report ............................................................................................... 4  
   1.6 Relevance of the research .......................................................................................................... 5  

2 Methodology; Case study research ........................................................................................................... 7  
   2.1 Qualitative research .................................................................................................................... 7  
   2.2 Why case study research? ........................................................................................................... 8  
   2.3 Definition case study research .................................................................................................... 8  
   2.4 Design of the case study research ............................................................................................... 9  
      2.4.1 Components of case study research ..................................................................................... 9  
      2.4.2 Theory in design work ........................................................................................................ 10  
   2.5 Case study protocol .................................................................................................................... 10  
   2.6 Holistic multiple-case study ....................................................................................................... 11  
   2.7 Desired skills of the case study investigator ............................................................................. 11  

3 Theory about criteria in site selection and development of conceptual framework ........... 13  
   3.1 Criteria in selecting a location from literature ........................................................................... 13  
   3.2 Aggregated criteria for further analysis ..................................................................................... 20  
   3.3 Development of conceptual framework about site selection for distribution centres ........... 23  
   3.4 Central hypothesis and propositions ......................................................................................... 31  
   3.5 Overview Chapter 3 .................................................................................................................. 34  

4 Problem analysis of PoR ....................................................................................................................... 35  
   4.1 PoR and the distribution function of the port of Rotterdam ....................................................... 35  
      4.1.1 Function PoR ....................................................................................................................... 35  
      4.1.2 PoR and distribution ........................................................................................................... 35  
      4.1.3 Attitude of PoR .................................................................................................................. 38  
      4.1.4 Unique Selling Points (USP’s) of the port of Rotterdam .................................................... 38  
      4.1.5 Parties involved in selecting a site of a distribution centre in the port of Rotterdam ....... 39  
   4.2 Other important parties in location selection for a distribution centre .................................. 40  
   4.3 Evaluation of the propositions by information of other important parties in location selection ........................................................................................................ 42  
      4.3.1 Evaluation of the first proposition .................................................................................... 43

XVII
List of figures and tables
Figure 1: Order of importance of criteria according to Chou & Yu (2013) ......................... 14
Figure 2: Weights of sub criteria of costs according to Chou & Yu (2013) ......................... 14
Figure 3: Critical determinants according to Oum & Park (2004) ........................................ 15
Figure 4: Relocation criteria determined by Min and Melachrinoudis (1999) ..................... 16
Figure 5: factors that can make the difference in location choice decisions according to Geffen & Ploem (2015) ........................................................................................................ 17
Figure 6: Overview with factors for logistics success according to Geffen & Ploem (2015) ................................................................................................................................................................. 18
Figure 7: First step of development of conceptual model about site selection for distribution centres: different phases in decision making ............................................................... 25
Figure 8: Step 2.1 of development of conceptual model about site selection for distribution centres: giving meaning to the demand phase ......................................................... 26
Figure 9: Step 2b of development of conceptual model about site selection for distribution centres: giving meaning to the search phase ......................................................... 29
Figure 10: Step 2c of development of conceptual model about site selection for distribution centres: giving meaning to the decision phase ......................................................... 30
Figure 11: Step 3 of development of conceptual model about site selection for distribution centres: incorporation of the intermediating companies ...................................... 31
Figure 12: Conceptual framework of site selection for distribution centre ............................. 32
Figure 13: Marked areas which are available for distribution centres within port of Rotterdam ................................................................................................................................................ 36
Figure 14: Interaction with different parties in location selection according to PoR ........... 39
Figure 15: Overview of locations of distribution centres of interviewed parties .......... 42
Figure 16: Formal relations of parties involved in location selection decisions ................. 48
Figure 17: Possible chain of parties involved in location selection .................................... 49
Figure 18: Adapted conceptual framework ............................................................................. 58

Table 1: Overview of criteria mentioned in papers ............................................................. 23
Table 2: Demand for distribution centre ............................................................................. 44
Table 3: Important criteria in location selection .................................................................. 54
List of abbreviations and definitions

ADR: Dangerous goods
BOM: Brabantse ontwikkelingsmaatschappij
BTT: Barge Terminal Tilburg
LSP: Logistic service provider
NDL: Nederland Distributieland
PoR: Port of Rotterdam (authority of the port of Rotterdam)
USP: Unique Selling Point
1 Introduction

1.1 Background

The port of Rotterdam is the main entrance to the European market and one of the logistic hotspots of our country. However, the port of Rotterdam is increasingly facing competition.

The competition of the port is two-sided. On the one hand, the port of Rotterdam is competing with other ports in the area. Large ships, containing goods for Europe, can be handled in several ports within the Hamburg – Le Havre range. So competition occurs for example between the port of Rotterdam and the port of Antwerp or between the port of Rotterdam and the port of Hamburg.

On the other hand, the area of the port of Rotterdam as a logistic hotspot is competing with other logistic hotspots in the Netherlands. Distribution centres are established in the port area, but distribution centres are increasingly being established at inland locations. Research from DTZ Zadelhoff (Zadelhof, 2015) reveals for example that the amount of transactions in logistics real estate increases in the provinces of Limburg and Brabant, while the amount of transactions in logistics real estate decreases in the province Zuid-Holland.

The authority of the port of Rotterdam is Port of Rotterdam (with a capital P, not to confuse with port of Rotterdam with a lowercase p, which is the physical port itself) has the goal to maintain the competitive position of the port of Rotterdam. This authority will be called PoR hereafter.

So far, PoR has been in a luxury position. The land designated for distribution centres is filled with distribution centres and almost all of them are in use. It might be that this luxury position will diminish when companies that are not strictly bound to port areas decide to locate their distribution centres at another location, which is more inland. So it is very interesting to know which companies, or in which cases, it is interesting to have a distribution centre within a port area to keep these companies within the port of Rotterdam and to prevent that they prefer a competing port, like Antwerp or Hamburg, to establish their distribution centre.
On the other hand, it is not necessarily the case that land designated for distribution centres is completely filled with distribution centres is the preferred situation. Warffemius (Warffemius, 2007) wrote a dissertation thesis about clustering of distribution centres around Amsterdam Airport Schiphol. He states that forces and mechanisms described in his report are applicable for other large airports and large seaports as well, so it can be applied to the port of Rotterdam. What he mentions in his introduction is that in the Schiphol area, only airport-dependent activities are permitted. When land in the Schiphol area will be allocated to companies that are not airport-dependent, there is a risk of shortage of land for airport-dependent firms that will arrive later. The result can be that business parks will be overcrowded, land costs will rise, routes will be congested and the accessibility of airport will be worse. This also holds for the port of Rotterdam. PoR is currently focussing on the segments dangerous goods (hereafter called: ADR), food and consumer goods and they would like to know whether this focus is the right one and how they can be more active in acquiring companies within those segments.

Within the port, there should only be companies that are related to the port. When companies that are not port-dependent will settle within the port, there is less space for companies that should have a place within the port. So besides considering logistic hotspots in the Netherlands as competition, it is of importance to consider those other areas for distribution centres as an opportunity to make companies that are not port-dependent move to other areas to increase possibilities for port-dependent companies. In that case, PoR should collaborate with authorities of the other logistic hotspots in The Netherlands. This collaboration can already be noticed with other parties. For example, European Gateway Services offers rail and barge connections between the port of Rotterdam and inland terminals in the European hinterland (ECT, 2015). By doing this, the deep-sea container terminals are extended within the Netherlands.

According to Roy van den Berg (Berg, van den, 2014) of PoR it is important for PoR to plan and organize the port as good as possible. Joyce Bliek (Bliek, 2015) of PoR adds to this that the port needs to be attractive for companies to settle down. It needs to have logistic facilities that match the demands of the companies.

The primary activities that take place in a distribution centre are the following (NDL, 2015):
• Receiving goods
• Storing goods
• Preparing goods for shipment

In addition to these primary activities, additional activities can be performed. The additional activities comprise of value added logistics (VAL) and value added services (VAS). VAL consist of activities that add value to the product itself (like repacking, assembly, labelling, etc.) while VAS consist of activities that add value to the supply chain (like financing, marketing, etc.)

Distribution centres are of importance for PoR because the business model of PoR is based on two types of revenue streams in which distribution centres both play a role.

The first revenue stream is based on port fees. Decisions about locations for distribution centres are decisions on the long term. So a location of a distribution centre defines the cargo flow on the long term as well. Since the cargo flows will be determined by the location of a distribution centre, this also determines in which port the goods will be handled. Since these goods will be transported by vessel, this generates revenues from port fees.

The other revenue stream is based on the income from lease of land. It will cause a lack of revenues when an area designated for distribution centres will remain empty.

1.2 Problem statement

A final decision for a location for a distribution centre depends on several factors. The decision may be based on criteria, like costs, distance, availability of labour etc. However, the decision is a process that takes place in a certain context and a variety of parties are involved in this process. The result of the decision process can be different in a different context and for different combinations of parties that are involved, even though the criteria on which the decision could rationally be made will be the same.

PoR currently does not have as much knowledge as they want about the factors that influence the selection of a location for a distribution centre by or on behalf of future users. It is of interest to have profound insight in the context of the decision making process and the involvement of the parties in this process. With this information, insight can be provided in possibilities to influence this process of location selection. PoR would like to know for which companies the port of Rotterdam is an interesting place for a
distribution centre in order to remain competitive in the future. The problem statement of the research in this report will thus be:

_How can PoR ensure that the land for distribution centres will be well filled in a way that it keeps generating and binding cargo flows to the port?_

### 1.3 Research questions

To come to an answer on this problem statement, an answer should be found on the following questions:

- Which factors are critical in the choice of a location of a distribution centre of a set of companies identified as relevant actors for this project?
- Which parties are involved in location selection for distribution centres and how are they related?
- What is the context/situation in which locations for distribution centres will be selected?
- What factors are going to change cargo flows that might affect the locations / functions of distribution centres?

### 1.4 Research objective

The function of PoR is to facilitate companies in the port of Rotterdam. The facilities regarding distribution centres should be satisfying for companies that want to (re-)organize their supply chains by selecting a location for a distribution centre. The objective of this research is to give PoR a clear advice on how the facilities should be regarding land allocation, information supply and acquisition strategy that it is satisfying for the companies that can transport goods via the port of Rotterdam. Cargo flows can also be bound to the port by distribution centres at inland locations of which the goods will be transported via the port of Rotterdam. As already stated, other logistics hotspots can be considered to be an opportunity to cooperate with to bind flows of goods to the port of Rotterdam. Cooperation between PoR and hinterland locations will be taken into account in this research as well.

### 1.5 Methods & overview of the report

To come up with an answer on the research questions and to fulfil the research objective a research method will be applied. This method will be explained in Chapter 2. In Chapter 3, a thorough literature review will be carried out. By this literature review,
criteria that determine the attractiveness of the location of a distribution centre according to scientific research will be identified. Besides that, the context in which decisions for a distribution centre take place will be sketched. The literature review will lead to a conceptual framework and based on this, a central hypothesis and some propositions will be formulated about the practice of selecting locations for distribution centres. After that, Chapter 4 will follow in which decision making in location selecting will be analysed. Case studies about real-world location selection problems are incorporated in this chapter.

Based on the analysis and case studies, the conceptual framework will be adapted. This will be used to draw conclusions in Chapter 6. An advice on how to improve the facilitating function of PoR will be drawn and recommendations will be given in Chapter 7.

1.6 Relevance of the research
Since already a lot of scientific research has been done about location factors, this is a different research in location factors. The existing scientific research is mainly based on decision models for location selection based on location criteria. Making decisions is however a humane activity and the presumption is that decisions in location selection are not only based on location criteria.

Research in which a more holistic view will be given on decisions about location choice is of interest. The decision-making process, the context in which those decisions are being made and the parties that are involved can be taken into account next to the location criteria only. In this research, specific cases will therefore be investigated thoroughly.

Besides that, it is of interest to maintain the competitive position of the port of Rotterdam. Therefore, PoR should add value to the supply chains of the future by being aware of the demands related to distribution.
2 Methodology; Case study research

The major methodology chosen for this research is case study research. In this chapter, the reason why this methodology is applicable for this research will be explained and a description will be given on what case study research is. The application will be done in Chapter 4. First, a motivation for qualitative research will be given.

2.1 Qualitative research

To find out information, qualitative research as well as quantitative research can be used (KW Research, 2015). The kind of information needed determines whether it is better to execute qualitative or quantitative research. In case the information needed need to give an answer on questions in the form of what, where and when, quantitative research fits. Qualitative research fits when an answer is needed on questions in the form of how and why.

Off course qualitative and quantitative research has a different characteristic and the difference in characteristic has advantages and disadvantages. The big difference of qualitative and quantitative research is the amount of samples. Quantitative research uses a large amount of samples. The result of the research can therefore be generalized for a larger population. Since qualitative research is very time consuming a smaller amount of samples can be used. The results can therefore not be generalized in the same way as the results from quantitative research. Since the amount of samples is small, the level of understanding and detail of the results will be much larger than results from quantitative research. Because of these details, new information can be found and can be a source for new ideas for marketing or further research. It is even the case that facts can be uncovered that where not obvious or facts of which one was not aware of. (Blackstone, 2015)

Quantitative research is very useful for statistical results and to find general baselines and trends (Whorton, 2009). But when greater insight need to be obtained on what actually determines these trends and by what they are drive, a dialogue is needed. Dialogues can be conducted in case study research. Case study research will be further explained in the next section.
2.2 Why case study research?

As stated in the introduction, research in which a more holistic view will be given concerning decisions about location choice is of interest for PoR. According to Yin (Yin, 2009), the case study research method allows investigators to maintain the holistic and meaningful characteristics of real-life events. Besides that, other characteristics of case study research are that the research will be about a present situation over which the investigator has no control, the research question starts with ‘how’, and the answer on the question needs a thorough description. These are all characteristics that fit this research.

The book of Yin about case study research has brought positive experiences to scientists and students for over 25 years already (Yin, 2009). These positive experiences are the reason why the methodology of Yin will be applied in this research as well.

Now that case study research appears to be an applicable methodology of this research, first the definition of case study research will be given and after that a description will be given on how it should be applied.

2.3 Definition case study research

Yin defines case studies in twofold:

1. “A case study is an empirical inquiry that
   o Investigates a contemporary phenomenon in depth and within its real-life context, especially when
     o The boundaries between phenomenon and context are not clearly evident

2. The case study inquiry
   o Copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result
   o Relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result
   o Benefits from the prior development of theoretical propositions to guide data collection and analysis.”

Case studies are generalizable to theoretical propositions. The goal is to expand and generalize theories.
2.4 Design of the case study research

A case study should be done according to a certain design in order to come up with evidences that does address the initial research questions. Case study design consists of five components that are important:

1. A study’s questions
2. Its propositions, if any
3. Its unit(s) of analysis
4. The logic linking the data to the propositions; and
5. The criteria for interpreting the findings

These components will be the basis of theory development for a case study.

The five components of design of the case study research will be described below and after that, the importance of a theory will be described.

2.4.1 Components of case study research

The components of case study research are the following:

A study’s questions

Literature should be used to identify what questions have been in research that is already done on the topic of interest. It is of interest whether new questions arose from those research or loose ends have been left for future research. This literature research can be found in Chapter 3.

Propositions of a study

Propositions of a study are the statements that move the investigator in the right direction of what should be studied. The statements for this research will be derived from the literature and can be found at the end of Chapter 3.

Unit of analysis

The unit of analysis is the actual case. These cases will be described in Chapter 4.

Logic linking the data to the propositions

To come up with results on what should be studied, data should be found that support the propositions. To match data to propositions, several methods can be used. Ways to do this are pattern matching, explanation building and cross-case synthesis. These
tactics have been integrated in analysing the results of the case study in Chapter 4 and will be further explained in chapter 5. (Whorton, 2009)

**Criteria for interpreting a study’s findings**
Since statistics cannot be used to rely on, rival explanations should be addressed for the findings. Rival explanations provide a critical check on the results from the case study and this increases the credibility of the findings (Mills, Durepos, & Wiebe, 2010). The rival explanations can be found in Chapter 7.

**2.4.2 Theory in design work**
A case study should have a theory. This theory is of importance since it defines what data to collect and the strategies for analysing the data. Besides that, it defines also the level at which the generalization of the case study results will occur. This generalization will not be statistical (by which a conclusion will be drawn about a population on the basis of data collected about a sample from that population), but analytic. In analytic generalization, a central hypothesis is used as a template with which to compare the empirical results of the study. For statistical generalization, the amount of cases should be higher.

The theory developed for the case study research for PoR can be found at the end of Chapter 3.

**2.5 Case study protocol**
Using a case study protocol is important. It keeps the researcher targeted on the topic and let the researcher anticipate on problems. A case study protocol has the following sections:

- Overview of the case study project
- Field procedures
- Case study questions
- Guide for the case study report

**Overview of the case study project**
The background information about the project should be given.
Field Procedures
Tasks in collecting data have been executed as prescribed by Yin. According to Yin, access to key interviewees must be gained, resources must be available during the research and preparation for unanticipated events must be done.

Case study questions
Questions must be prepared in order to stay on track during the interviews.

Guide for the case study report
Before data collection, the researcher must have thought about the outline and the audience for the case study report. How this case study protocol has been applied while carrying out the case studies is described in Chapter 5.

2.6 Holistic multiple-case study
Yin describes four types of case study research. These are holistic single-case study research, embedded single-case study research, holistic multiple-case study research and embedded multiple study research. For this research, holistic multiple-case study research has been chosen. By a holistic approach, the global nature of companies can be taken into account as well as their way of decision-making. Multiple-cases can be used to find replication, which will make the conclusions stronger.

Cases must be selected such that they either predict similar results or predict contrasting results but for foreseeable reasons. In the replication procedures it is of importance that a theoretical framework has been developed to state the conditions under which a particular phenomenon is likely to be found as well as the conditions when it is not likely to be found. This framework can be found in Chapter 5.

2.7 Desired skills of the case study investigator
Since case study research is not based on a fixed routine, the personality of the case study investigator is of importance. There is no test that proves whether one is a good case study researcher or not, but according to Yin, there are some required skills. Some of those required skills are that the investigator should be able to ask good questions, to listen very well and to interpret the answers. In Chapter 5 will be described why the researcher in this research is capable of conducting case study research.
In the next chapter, theory will be reviewed in order to develop sharper and more insightful questions about selecting locations for distribution centres.
3 Theory about criteria in site selection and development of conceptual framework

As stated in the previous chapter it is of importance to use existing literature. By reviewing the literature, there can be identified what questions have already been asked in other research projects and also whether new questions arose from those research or loose ends have been left for future research. Besides that, sharper and more insightful questions can be defined for this research.

In section 3.1, a literature review will be given of criteria that are important in site selection for a distribution centre. The aggregation of criteria that will be used in this research are described in section 3.2. In section 3.3 a conceptual framework of decision making about site selection will be developed based on the factors from section 3.2 and an outlined context. Based on that, section 3.4 follows. In this section a central hypothesis will be developed that can be accepted or rejected by case study research and propositions will be formulated that will lead into the direction of what should be studied.

3.1 Criteria in selecting a location from literature

Criteria that are important in selecting a site for a company location can be found in literature and will be described below. To get to know insight in the importance of those criteria related to each other, relevant papers will be reviewed which used weights for the different criteria at first. After that, some papers with more qualitative information will be described to supplement the list of criteria.

Chou and Yu (Chou & Yu, 2013) wrote a paper about dealing with decision-making problems according a new hybrid fuzzy Analytic Hierarchy Process. They applied this method to the location choices of international distribution centres in international ports from the view of multiple-nation corporations and the reason for that was that they wanted to know whether the fuzzy Analytic Hierarchy Process is suitable for this kind of questions. For the application they used six criteria and thirty sub criteria and these have been ranked in a case.

They found that criteria are important in the following order:

1) Cost
2) *Infrastructure and efficiency*

3) *Geographical condition*

4) *Economy*

5) *Investment conditions*

6) *Government*

The importance is represented in Figure 1.

![Figure 1: Order of importance of criteria according to Chou & Yu (2013)](image)

These criteria have been divided into sub criteria. Since *cost* is by far the most important criterion, the sub criteria of *cost* will be explained below.

The most important costs are *transportation costs*. *Operation costs, land costs and labour costs* are equally important, but almost half as important as *transportation cost*. *Port charge* is five times less important as *transportation costs*. This is represented in Figure 2.

![Figure 2: Weights of sub criteria of costs according to Chou & Yu (2013)](image)
The paper of Oum & Park (2004) identifies the major criteria that multinational companies consider important when they decide the locations of their regional distribution centres. The focus in this research is on the Asian region.

Oum and Park identified seven critical determinants in the case on which they applied their method. These are in order of decreasing importance:

- Market size and growth potential of catchment region
- Geo-location, transport linkage and market accessibility
- Port, airport and inter-model transport facilities
- Political stability
- Skilled labour force, labour quality, and labour peace
- Modern logistics service providers and costs
- Pro-business government and officials

Oum and Park determined the relative importance of locational determinants and the standard deviation. This is represented in Figure 3.

![Critical determinants according to Oum & Park (2004)](image-url)
One of their results is that market-related and service-related criteria are more important in selecting a location for a distribution centre than cost-related factors.

It is remarkable that costs have not mentioned by Oum and Park, while Chou and Yu considers this the most important criterion. This is interesting to keep in mind. Oum and Park consider market size and growth potential of catchment region as most important, but this can be considered to belong to the category economy of Chou and Yu, which is on the fourth place.

Min & Melachrinoudis (1999) determined weights for the relocation criteria that represent the management teams’ opinions in the case they used. These weights are represented in Figure 4.

While Chou and Yu consider costs the most important criterion, Min and Melachrinoudis consider this on the second place. According to them, traffic access is the most important criterion, while this is on a second place by Chou and Yu.

![Figure 4: Relocation criteria determined by Min and Melachrinoudis (1999)](image)

Recently, Stec Groep (Geffen & Ploem, 2015) published a report about future location dynamics in logistics companies. They came up with factors that can make the difference in location choice decisions. These are represented in Figure 5. It is remarkable that clustering is mentioned while this has not been mentioned before by other studies. What can be found about it is that firms take into account the actions of competitors when they make their own decisions. This means that decisions of one firm are interrelated with those of other firms (Draganska, et al., 2008).
They also have an overview with factors for logistics success. This overview can be found in Figure 6. It is interesting to see that the land costs and rental fee are not the main factors for logistical success. A declaration about that cannot be found in the paper.
The information already described can be supplemented with qualitative information from other papers.

Alberto (Alberto, 2000) wrote a paper wherein he develops a decision-support approach based on the analytic hierarchy process. This framework consists of traditional criteria as well as logistic service attributes. The criteria he describes are similar to those already mentioned in the papers described above. What he also mentions and what has not been mentioned before is the interaction with customers like the response flexibility to customers demand and integration with customers. He states that the integration of logistic processes should be favoured by the site and personal contacts should be promoted.

Awasthi, Chauhan and Goyal (Awasthi, Chauhan, & Goyal, 2011) did research about location planning for urban distribution centres under uncertainty. Besides the already mentioned criteria, they also mentioned security of the location from accidents, theft and vandalism.

Da Silva Portugal, Vaz Morgado and Lima Junior (da Silva Portugal, Vaz Morgado, & Lima Junior, 2011) wrote a paper about the location of cargo terminals in metropolitan areas.
There are also a lot of similarities in the criteria he describes and the criteria described above and they also mention security like Awasthi, Chauhan and Goyal, but he added the safety due to road conditions.

MacCarthy and Atthirawong (MacCarthy & Atthirawong, 2003) wrote a paper about factors affecting location decisions in international operations and took into account the social and cultural factors as well.

According to Renshaw (Renshaw, 2002), the site selection process is driven by operating costs and customer service objectives. Which is interesting since the last factor has not been mentioned explicitly in the sources mentioned before. It can be assumed that customer service objectives can be translated into reliability and time.

Ozcan, Celebi and Esnaf (Ozcan, Celebi, & Esnaf, 2011) mentioned criteria in the decision for warehouse location selection that are based on capacity, cost and customer. They mentioned:

- Unit price per m$^2$
- Stock holding capacity
- Average distance to shops
- Average distance to main suppliers
- Movement flexibility

It seems that several cost- and transport related factors are of importance, but also local conditions. And the order of importance seems to be different every time.

Held (Held, 2003) wrote a paper in which he describes four case studies about location selection of four retailers in the United States of America. The final decision for a location was based on transport and non-transportation factors. The non-transportation factors included the company culture and the customer base. These factors were related in the location of the distribution centre. According to Held, an attractive business climate makes potential users interested in a certain site. It seems to be that a certain business climate can be predominate in being interested in a certain site. He learned during this research that for distribution centres, compromises can be made on transportation criteria, but business-friendly transportation officials who really understand the importance of exporting industries and who understand the importance
of a low response time are the determining factor. This underlines the importance of the context and parties involved in decision making.

According to Stec Group (Geffen & Ploem, 2015) the preference for a region depends on where a company is based and what the market orientation is.

Warffemius (Warffemius, 2007) mentions that the name ‘Schiphol’ has an attraction force and factors other than distribution- and transportation factors determine the site of a distribution centre.

3.2 Aggregated criteria for further analysis

The information about factors and criteria in location selection will be aggregated to use for further analysis. The following factors have been distinguished:

- Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour.

An explanation on how to interpret these factors will follow.

**Costs for land, operations and transportation**

Costs for land, operations and transportation have been mentioned a lot. This factor comprises the total costs for starting up activities, like purchasing the land and/or distribution centre and the rent of the distribution centre, but also the costs during operation like costs of handling, operational costs of the distribution centres, port charge in the port of call and the costs for transportation that are related to a certain location. A more expensive location with relatively low transportation costs can compete with a less expensive location with relatively high transportation costs. The balance between costs and quality can also be of importance since ‘value for money’ is mentioned by Geffen and Ploem (2015).
**Presence of other companies and brand of the site**

The presence of other companies means the presence of competitors or other companies with similar activities. Geffen and Ploem (2015) mentioned clustering.

Also, the presence of companies to cooperate with is of importance, Oum and Park (2004) mentioned modern logistic service providers for example. The variety of companies present defines the brand of the site and can give an indication of what is attractive at the location. The brand of the site is an attraction force according to Warffemius (2007).

**Infrastructure and geo location**

The distribution centre should be at a location that is relative to the flow of goods, but should also have the accessibility to infrastructure that is needed to transport goods.

Therefore, the distance to the customer is of importance as well as the distance from the production location, but this needs to be combined and in balance with access to highway, railway, waterway and airway.

Also the efficiency of the terminal, congestion of the highway, delivery time and reliability of it are of importance.

**Distance to origin of the company**

The distance to the origin of the company plays a role since a location in the proximity of the origin of the company that is satisfying will prevent from looking for another location that is at a larger distance. Also, the cultural distance plays a role. The location of interest should fit the standards and values of the company itself.

**Availability of land and possibility to expand**

The characteristics of the site of the location of interest are important in terms of capacity, building possibilities, soil. But also the possibility to expand and the flexibility to move.

**Safety**

Safety can be of importance in terms of the connected infrastructure, like road safety. But also social security at the distribution park and the availability of security services can be of importance.
**Government and investment conditions**

In terms of government, the political stability is of importance, but also the rules, regulations and procedures in a country stated by the government like the efficiency of customs, the type of cooperation of enterprise and government, the efficiency of government department and taxes and incentives.

**Economy and market size**

Economy and market size can be measured in several ways.


Min and Melachrinoudis (1999) mention the market opportunity (customer, supplier, competitor, alpha, market potential).

All these approached are considered to be in the category ‘Economy and market size’ in this report.

**Availability, quality and costs of labour**

The availability, quality and costs of labour are of importance. This also includes the labour peace.

Indirectly, the quality of living needs to be such that it is beneficial for the labour forces. So the climate and living expense for example should be such that it a nice environment to live in for labour forces.

In Table 1, these criteria are mentioned and the papers in which they have been mentioned are indicated.
3.3 Development of conceptual framework about site selection for distribution centres

As already mentioned, a more holistic view concerning decisions about location choice is of interest. Therefore, the context will be outlined in which the criteria mentioned in part 3.2 are of importance. Together, this will form a conceptual framework about site selection for distribution centres. In this section, the development of this conceptual framework will be described.

This section will start with a description about decision making. Several steps can be distinguished in decision making. These steps will be applied and a meaning of it will be given in the development of the conceptual framework about site selection for distribution centres. Since several parties are involved in location decisions, the next
part of this section will be about their role in decision making in site selection to include this in the conceptual framework.

**Step 1: Three steps in decision making**

To get more insight in decision-making in location selection, a model of decision-making has been chosen. This model will be explained first and after that, it will be applied for decision making in site selection.

**Decision making**

Several decision making models can be found in literature. For this research, a decision making model have been chosen in which decision making have been described as a process. This can be done with the model of Herbert A. Simon.

Simon developed a model of decision-making in which he distinguished three steps: intelligence, design and choice (Simon, 1986). During the first phase, the intelligence phase, the emphasis is on the problem. By the end of this phase, it should become clear what to decide. Intelligence, in this sense, refers to the military meaning of the word. This covers the gathering of information without knowing the contribution of this information to the decisions to be made.

In the second stage, the design phase, alternatives will be developed. Research will be done into the available options. Besides that, the objectives for the decision about to make should be stated.

The third and last phase, the choice phase, is the phase in which the alternatives that have been developed will be evaluated and one of them will be chosen. (Principles of Management, 2015)

**Decision making in site selection**

In the development of the conceptual framework of decision making in site selection, the three steps of Simon will be applied. The first step, in which the emphasis is on the problem, the demand for a distribution centre arises. This is therefore called the *demand phase*. The second step in which alternatives will be developed, the different options for a distribution centre will be examined. This is called the *search phase*. The last phase in which a final decision for one of the alternatives will be made is called the *decision phase*. The distinction of the three steps is the first step of the development of the
conceptual framework about site selection for distribution centres and this is represented in Figure 7.

![Figure 7: Step 1 of development of conceptual framework about site selection for distribution centres: different phases in decision making](image)

**Step 2: Giving meaning to different steps**

Now that the three different steps have been distinguished. There should be given meaning to them. Below, the meaning of the demand phase, search phase and decision phase will be described.

**Demand phase**

Recently, two studies have been executed on logistics within the Netherlands that can be used to give meaning to the demand phase. One was of Logistiek Magazine (Logistiek.nl, 2015). They investigated the satisfaction of the current business location of several companies by the use of a group of respondents of which 54% is currently active within the field of transport and logistics as logistics manager. 68% of the respondents indicate that they do not have plans to move to another location within the next five years. Since this is number is in the context of satisfaction, this indicates that the majority will not move to another location because they are satisfied at the current location. This idea can be supported by the second study of the Stec Group (Geffen & Ploem, 2015). Their study was about location dynamics within the Netherlands and they mapped the location dynamics within the Netherlands. One of their findings is that 55% of the companies within the Netherlands expect to have a housing problem within 4 years, which means
that they have to move. According to Stec Group, the expected housing problem is not because of dissatisfaction, but because of a shortage in capacity, expected growth and a changing supply chain. Therefore, the demand for a distribution centre is assumed to be the result of a shortage in capacity, expected growth and a changing supply chain. The meaning of the demand phase is added to the image in Figure 7 and this results in Figure 8.

**Search phase**

Regarding the search phase, it is interesting which options there are and why they are of interest. This will be elaborated in this part of the report.

Popular places for logistics within the Netherlands can be found on the ‘Logistieke kaart van Nederland’ (Logistiek.nl, 2014). The top 20 of those locations are:

1) Venlo-Venray
2) Tilburg-Waalwijk
3) West Brabant (Moerdijk, Breda, Roosendaal en Oosterhout)
4) Oss-Veghel-Eindhoven
5) Haven Rotterdam
6) Schiphol
7) Arnhem – Nijmegen
8) Zwolle – Kampen – Meppel
9) Roermond
10) Haven Amsterdam
11) Maasvlakte
12) Almere-Zeewolde
13) Delfzijl Eemshaven
14) Rivierenland (Tiel – Geldermalsen)
15) Emmen – Coevorden
16) Hengelo – Enschede
17) Den Haag – Westland
18) Heerenveen
19) Vlissingen – Terneuzen
20) Heerlen

Two things should be noted:

- The port of Rotterdam is ranked higher than the Maasvlakte area. The rankings are fifth and eleventh respectively. Considering the inland position of the locations on the first and second place, it might be that the Maasvlakte area is assessed on the distance to inland locations.

- The port of Amsterdam and the Maasvlakte area are quite close, tenth and eleventh respectively. The port of Amsterdam can therefore be seen as a tough competitor of the Maasvlakte area. What should be taken into account is that selection of the port of Amsterdam is because of market considerations and the existing agglomeration.

The second note is supported by Oum and Park (2004) and Warffemius (2007).

Oum and Park (Oum & Park, 2004) found from interviews that main reasons for multinational companies to decide for a location near Amsterdam rather than near Rotterdam is because of market considerations and not cost considerations. That the environment around Amsterdam is of importance is also emphasized by Warffemius.

Warffemius (Warffemius, 2007) wrote a PhD thesis about why distribution centres cluster around Amsterdam Airport Schiphol. According to him, for most of the companies, the benefits of the agglomeration are the most important factor in selecting that site for a distribution centre.
Ploem (Ploem, 2015) says that logistic success is becoming more and more a balanced mix of qualities of the region and the future supply chain. He also says that the availability and costs of personnel are of importance. According to him, facts about personnel (unemployment, level of education, experience in logistics, costs of labour), planned investments in infrastructure, barge- and rail connections and an available logistic network are of importance for the supply chain.

Although Venlo-Venray leads the top 20, it is not the case that Venlo-Venray is always the best option. According to the research of Logistiek Magazine (Logistiek.nl, 2015) in which they investigated the satisfaction of the current business location of several companies 34% of their respondents think that Venlo-Venray is the best location for logistics activities in general terms and for their specific sector, 29% thinks that Venlo-Venray is the best location for logistics activities. Almost 85% thinks that infrastructure and multimodal accessibility determines the location.

The options outside The Netherlands can be taken into account as well. However, the Netherlands seems to be a very attractive place for a European distribution centre. According to Warffemius (Warffemius, 2007), one-half of the European distribution centres were located in The Netherlands in 2002.

Groenewout (Beerens & Verburg, 2012) wrote a paper in which the attractiveness of the Netherlands has been compared to attractiveness in Germany, Belgium and France from the viewpoint of COO, CEO and CFO. All these different board members have different drivers and opinions and they all have influence on the final decision. The attractiveness of the Netherlands, Germany, Belgium and France has been assessed on start-up costs, operational costs, exit costs and some other locational factors. It is noticed that the land costs in The Netherlands are quite high. But operational costs are relatively low and residual costs of the initial investment are quite high. These benefits are higher than for example lower costs of land in other countries. Besides that, other factors like business environment, infrastructure and taxes are beneficial in the Netherlands compared to other countries.

From these considerations, it seems to be important that it depends on the company which location fits best and besides that, the factors should be balanced such that the combination of factors is beneficial. The value of each factor depends therefore on the
value of other factors and it is therefore the combination of factors that is of importance instead of the total.

What should be added in Figure 8 to give meaning to the search phase are the different criteria described in section 3.2. The options for a location for distribution centre will be assessed according those criteria. The importance of criteria depends on the company and a lower score on one criterion can be balanced by a high score on another criterion. In the end, the valuation of the several options depends on the balance of all factors. The addition of the meaning of the search phase is represented in Figure 9.

![Diagram](Figure 9: Step 2b of development of conceptual framework about site selection for distribution centres: giving meaning to the search phase)

**Decision phase**

To give meaning to the decision phase, Simon will be used again. Besides his theory about decision-making, he also developed the theory of bounded rationality, which is called “satisficing” (The Economist, 2009). According to him people seek for something that is “good enough” instead of maximizing their utilities.

According to Stec Group (Geffen & Ploem, 2015) approximately 75% of the respondents states that they make housing decisions 100% rational, but 43% of the respondents also declares that they don’t have access to all information they need.
Therefore, it is assumed that a final decision will be made on the information they have about the options they have examined. The final location is not necessarily the best location, but it is good enough. This addition is represented in Figure 10.

**Figure 10: Step 2c of development of conceptual framework about site selection for distribution centres: giving meaning to the decision phase**

**Step 3: Parties involved in location decisions**

There are several parties involved in location decision. Their roles and relationships will be explained hereafter.

Logistic activities are not the core activities of producers/shippers (van Toor, 2004). Therefore, logistics activities have been outsourced by producers/shippers to logistic service providers. Logistic service providers are mostly international operating parties that provide services for several clients for a certain period. The manner of acting of logistic service providers postulate demands on logistic real estate and the manner in which this is financed. Instead of ownership of a distribution centre by the user itself, a distribution centre will be hired. Because of this demand for hiring, investors became interested in logistic real estate. They see interesting returns in investing in a distribution centre. In 2011, 70% of the distribution centres at logistic hotspots was owned by investors (Castelein, 2012). Because of the difference between owner and user of distribution centres, other parties became active in the demand and supply for distribution centres. Developers and brokers and other intermediating parties are active
in the market for distribution centres. Besides that, a lot of consultancy companies focus on the logistic sector.

According to Hesse (Hesse, 2003), selecting a location for a distribution centre is based on active participation of brokers and developers. Brokers are active in trading locations to find customers or they are asked by customers to find interesting locations for them. Developers are active in purchasing, owning, developing and renting land for distribution centres. Their goal is to make profit and not to achieve public goals related to freight transportation.

Since the role of intermediating companies is substantial, this should be added to the image in Figure 10. This will lead to Figure 11.

Figure 11: Step 3 of development of conceptual framework about site selection for distribution centres: incorporation of the intermediating companies

3.4 Central hypothesis and propositions

Now that the criteria that are important in selecting a site for a distribution centre have been found in literature and the context have been sketched, a conceptual framework about site selection for distribution centres have been developed. The conceptual framework is represented in Figure 12.
Figure 12: Conceptual framework of site selection for distribution centres
After the development of the conceptual framework, a central hypothesis is formulated below. This central hypothesis is based on the active role of intermediating companies and the information about the criteria.

After this description of the literature a central hypothesis has been developed. This central hypothesis states:

*Users of distribution centres can be attracted by playing a more active role in acquisition and by improving the information supply about ‘costs for land, operation and transportation’, ‘presence of other companies’, ‘infrastructure and geo location’, ‘distance to origin of the company’, ‘availability of land and possibility to expand’, ‘safety’, ‘government and investment conditions’, economy and market size’ and ‘availability, quality and costs of labour’.*

The propositions that will lead into the direction of what should be studied are stated below. These propositions will be studied during the case study. In other research, propositions would be called hypothesis, but in case study research usually propositions is a common term.

**Propositions:**

- Companies are in demand of a distribution centre because they are in need for capacity, they want to have expansion capability or there are changes in the supply chain.

- When a company is aware of the demand of a distribution centre, they will start looking for different (locations for) distribution centres on basis of intermediating companies.

- The considerations for the different (locations for) distribution centres will be made on basis of the following criteria:
  - Costs for land, operation and transportation
  - Presence of other companies
  - Infrastructure and geo location
  - Distance to origin of the company
  - Availability of land and possibility to expand
  - Safety
  - Government and investment conditions
• Economy and market size
• Availability, quality and costs of labour

When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about criteria.

3.5 Overview Chapter 3

This chapter started with an overview of factors and criteria in site selection. Aggregated factors that are of importance as identified in this research are ‘costs for land, operation and transportation’, ‘presence of other companies’, ‘infrastructure and geo location’, ‘distance to origin of the company’, ‘availability of land and possibility to expand’, ‘safety’ and ‘government and investment conditions. After that, a conceptual framework have been developed in which the context of site selection decisions have been sketched and combined with the factors. This conceptual framework consists of three steps. The first step is the demand phase in which demand for a distribution centre arises due to demand for capacity, demand for expansion capability or demand for changes in the supply chain. The second step is valuation of different options depending on the combination of factors. The last step is the final decision based on knowledge about the factors. Between the first and the second step are intermediating parties involved that influence the decision making process. Based on the conceptual framework, a central hypothesis and propositions have been formulated. The case studies that can be found in the next chapter will be used to evaluate these propositions.
4 Problem analysis of PoR

The case of PoR will be used to evaluate the conceptual framework in Chapter 3. First, PoR will be described. After that, the other parties important in location selection will be identified. With the information from interviews the propositions mentioned in Chapter 3 will be evaluated. Finally, the conceptual framework will be adapted and the central hypothesis will be tested. Based on this, an advise can be given to PoR.

4.1 PoR and the distribution function of the port of Rotterdam

First, PoR will be described. This will be done in order to get insight in their self-awareness and their current activities regarding acquisitions of distribution centres.

The description of PoR is based on interviews with Roy van den Berg (15-10-2014), Niek Ooijevaar (22-10-2014) an interview with both of them (19-11-2014), an interview with Joyce Bliek (6-3-2015), a meeting with team Breakbulk (28-04-2015) and information from the document of PoR which is called Distrivisie Rotterdam. This document has been written by PoR to optimise the distribution in the port and the region of the port. The following information has been found about the role of PoR.

4.1.1 Function PoR

PoR aims to create a climate that is attractive to settle down for enterprises. They develop infrastructure and provide information.

PoR wants to plan and organize the port as good as possible.

PoR earns money by seaport fees (50%) and ground revenues (50%). The shareholders of PoR are municipality of Rotterdam (70%) and the national government (30%).

4.1.2 PoR and distribution

Within the area of the port of Rotterdam, there are three areas that are dedicated for distribution centres. They are circumscribed in Figure 13.
The area on the left-hand side (the west side of the port area) is called the Maasvlakte area. The area in the middle is the Botlek area and the area on the right-hand side (the eastern area) is called Eemhaven.

The surface of distribution centres at the Eemhaven area is 32,80ha and the surface of distribution centres at the Botlek is 108ha (Provincie Zuid Holland, 2015). The Botlek and Eemhaven areas are currently fully occupied (Berg, van den, 2014). Distripark Maasvlakte has a net surface of 84ha. There is 17ha of space left at Distripark Maasvlakte.

For PoR, it is important that a distribution centre adds to the revenues from rents and port fees. Their location and facilities should allow the most efficient handling of containers in the port and have a limited contribution to congestion on the hinterland network.

When a request for a distribution centre has been submitted, a business case will be made by PoR. This business case differs from business cases in case of construction of a new quay wall. The difference is that in quay walls for example investments will be done that needs to be earned back. There will not be done any investment in distribution centres that need to be earned back; the focus is on attracting cargo flows that are bound to the port of Rotterdam by the distribution centre.

Distribution centres cannot all be located in the port area. Distribution centres within the port generate traffic and decrease the accessibility by road. Distribution centres can
also be located in the region of the port or in the hinterland, since the port of Rotterdam is physically connected with distribution centres in the hinterland. To optimise the distribution in the port and the region around the port, PoR developed the document Distrivisie Rotterdam (Rotterdam, 2014). The aim of this document is to bind cargo flows to the port of Rotterdam. Distrivisie Rotterdam consists of an approach on three levels:

1. Optimising areas for distribution centres within the port industrial complex.
Two of the three areas for distribution within the port area are already fully in use. The only area in which space is available is the Maasvlakte area. Regarding land allocation within this port area, the focus is on ADR, food and high-quality consumer goods (60 acres in total of which 20 acres for ADR and 40 acres for food and high-quality consumer goods) of larger customers.

2. Connection distribution region Rotterdam.
PoR is working on cooperation with surrounding distribution areas for establishment of customers that entail cargo flows to the port of Rotterdam, but who cannot be established within the port area. Cooperation already exists in form of ‘DeITri Platform’, ‘Infodesk Bedrijventerreinen Zuid-Holland’ and regional development parties.

3. Binding cargo flows with the hinterland.
PoR works on the optimisation of hinterland transportation. Currently, PoR is involved in three projects: ‘Nextlogic’ (to optimise inland shipping), ‘Inlandlinks’ (to optimise the network of inland terminals) and ‘Railincubator’ (to optimise the use of the railway network).

This approach is based on market developments. A trend which is taken into account, is port centric logistics. Port centric logistics means that containers will be unpacked at the port and the load will be transported to the warehouses (Monios & Wilmsmeier, 2012). It depends on, amongst others, the hinterland connections whether this is an attractive option to a port.

Among other actions, the following actions have been / will be taken according to Distrivisie Rotterdam:
• Developing a shortlist of ADR customers in the region of Rotterdam and approach them to attract them and let them settle within the port of Rotterdam.
• Involving brokers more in case of possible customers who consider establishment within the port of Rotterdam.
• Developing a list of contact information from people at regional parties or development organisations of areas of distribution centres.
• Developing a commercial presentation about Distribution.

4.1.3 Attitude of PoR

PoR was used to have areas for distribution centres that were fully used. They didn't have to acquire parties to establish their distribution centre within the port area, they were even used to the situation in which parties presented themselves. PoR is therefore reactive. They react on parties who approach PoR, but they don't have a strategic vision on very actively acquiring parties. Therefore, the attitude of PoR can be considered to be reactive.

Although PoR mentions in Distrivisie the binding of cargo flows with the hinterland, PoR is a bit hesitant to refer companies that are looking for a distribution centre to an inland location (Business team breakbulk, 2015). PoR is anxious that cargo flows will go through another port (for example the port of Antwerp) instead of the port of Rotterdam.

4.1.4 Unique Selling Points (USP's) of the port of Rotterdam

According to Roy van den Berg, the advantages of the port of Rotterdam are:

• Good connection with sea and land for large volumes
• Customs cooperate well and there are tax benefits
• There is a port community system
• The Netherlands have the best port infrastructure in the world (Port of Rotterdam Authority, 2013)

The drawbacks of the port of Rotterdam are:

• The land is expensive
• Labour force is expensive and hard to find
• The distance to retail customers is too long
4.1.5 Parties involved in selecting a site of a distribution centre in the port of Rotterdam

Based on an interview with Niek Ooijevaar (Ooijevaar, 2014) the parties involved in selecting a site of a distribution centre in the port of Rotterdam can be categorized as follows:

- Users of the distribution centre
- Owners of the distribution centre
- Real estate companies
- Port of Rotterdam

The users of the distribution centre are the parties that use the distribution centre in supporting their supply chain. The kinds of companies that belong to this category are shippers and logistic service providers. Shippers are the manufacturers and/or owners of the goods and logistics service providers. They can be seen as the organisers of transportation that do not necessarily own the means of transport.

The owners of the distribution centre are the parties that invest in the distribution centre in order to generate returns. The kinds of companies that belong to this category are project developers and investment companies. These owners of the distribution centres are most of the time intermediaries between the users of the distribution centre and the Port of Rotterdam.

Real estate companies can be involved in the process to select a distribution centre as well, since a company that wants to use a distribution centre approaches a real estate company to look for a suitable distribution centre.

PoR is sometimes involved in the selection of a site of a distribution centre in the port of Rotterdam.

The way PoR sees the interaction between these different parties is therefore:

![Figure 14: Interaction with different parties in location selection according to PoR](image)

PoR wants to know what the important factors are in selecting a location for a distribution centre. Therefore, they suggested to interview some of the parties involved in this selection. The parties that have been interviewed will be described in the next part of this chapter.
4.2 Other important parties in location selection for a distribution centre

To gain information about the factors and criteria in selecting a location for a distribution centre, other parties than PoR have been interviewed. It is of interest to interview other parties involved in site selection for a distribution, therefore, users of distribution centres should be interviewed, owners of distribution centres should be interviewed and real estate companies should be interviewed. Since the focus of PoR is on ADR, food and high-quality consumer goods, it interesting to select companies in these sectors. Besides that, it is interesting to select parties from different distribution centre areas within the port of Rotterdam.

In cooperation with Niek Ooijevaar and Roy van den Berg parties that have been involved in site selection for a distribution centre recently and which are main players and which are representative for a group of actors have been selected to interview. These are Kloosterboer, Neele-VAT logistics, Crocs, Pro Delta, Dudok Vastgoed and Borghese Logistics. No knowledge was already available by starting this research about brokerage and due to a limited period of time the advice of PoR has directly been followed. Some of these represent more than one category. Kloosterboer and Neele-VAT logistics own some of the distribution centres they have in use and Pro Delta, Dudok Vastgoed en Borghese Logistics sometimes act as a real estate company for the distribution centre they own. Pro Delta owns distribution centres for ADR goods, Kloosterboer distributes food and Crocs distributes high-quality consumer goods. The locations of these companies is represented in Figure 15.

As already described in chapter 3, more parties might be involved in location decisions. While doing the interviews, more parties have been identified. The extended list of parties is the following:

- Users of the distribution centre
- Owners of the distribution centre
- Real estate companies
- Port of Rotterdam
- National level acquisition parties like:
  - NFIA (Netherlands Foreign Investment Agency)
  - NDL (Nederland Distributieland)
- Provincial level acquisition parties like:
• BOM (Brabantse Ontwikkelings Maatschappij)
• LIOF (Limburgse Investerings- & Ontwikkelingsmaatschappij)

• Regional / Municipality level acquisition parties like:
  • REWIN (Regionale Ontwikkelings Maatschappij West-Brabant)
  • Rotterdam partners

• Inland terminals
• Consultancy companies
• Transportation companies

The parties in the extended list are interesting since they can give an indication on why a company will select a location, which is not the port of Rotterdam.

Since it is interesting to get more insight in national acquisition NDL have been interviewed. Since the tasks of provincial and regional/municipality level are probably similar, one of them have been chosen to interview which is BOM (a provincial level acquisition party). BTT is an inland terminal and have also been interviewed.

So most of the parties that are of importance in selecting a location for a distribution centre have been interviewed and knowledge have been gained during the interviews about the role of parties that have not been interviewed.

In Figure 15, an overview have been given of the locations of distribution centres within the port of Rotterdam of interviewed parties. Most of them have also distribution centres at other locations. Of course, NDL, BOM and BTT do not have distribution centres within the port of Rotterdam.
The case studies have been applied and executed as described in Chapter 2 and a description of it will follow hereafter. The questions used during the interviews have been added to this report in Appendix 1.

In the next part of this chapter, the information from the interviews will be used to come up with an evaluation of the propositions.

4.3 Evaluation of the propositions by information of other important parties in location selection

As already stated, the propositions will be evaluated by information of important parties in location selection, other than PoR. These statements were:

- Companies are in demand of a distribution centre because they are in need for capacity, they want to have expansion capability or there are changes in the supply chain.
- When a company is aware of the demand of a distribution centre, they will start looking for different (places for) distribution centres on basis of intermediating companies.
- The considerations for the different (places for) distribution centres will be made on basis of the following criteria:
  - Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour

- When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about criteria.

From the information gained from the interviews, these propositions can be evaluated.

**4.3.1 Evaluation of the first proposition**

The first proposition is:

Companies are in demand of a distribution centre because they are in need for capacity, they want to have expansion capability or there are changes in the supply chain.

To evaluate the first proposition, first the information about demand for distribution centres from important actors will be elaborated. After that the proposition will be evaluated.

*Information about demand for distribution centres from the interviews*

The customer of Kloosterboer wanted to expand the export and therefore this demand was because of a change in the supply chain.

Crocs selected the distribution centre in the port of Rotterdam because they changed the supply chain by consolidating their distribution centres.

ProDelta have been approached by Forever 21 to build a distribution centre. This was because of expansion of the activities.

The task of Borghese is realizing housing solutions. This implies they are in need for capacity or want to move from one distribution centre from another (which means a change in the supply chain). Sometimes, they take into account the demand for expansion. In that case, they purchase land and built on only a part of it. The remaining area is reserved in case the distribution centre needs to be expanded.
According to BOM, a distribution centre should fit the supply chain. NDL helps companies to find a logistic solution. This means that changes in the supply chain can be an issue.

**Evaluation of the proposition**

In Table 2, the reasons why a distribution centre is needed according to information from the interviews is represented. No cross means that this is not explicitly mentioned during the interview.

<table>
<thead>
<tr>
<th>Need for capacity</th>
<th>Nele</th>
<th>VAT</th>
<th>Coss</th>
<th>Prodelta</th>
<th>DWSI</th>
<th>Bigrösse Logistik</th>
<th>BOM</th>
<th>NDL</th>
<th>BTT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand for expansion capability</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in the supply chain</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Demand for distribution centre

From the information from the interviews, it becomes clear that need for capacity, demand for expansion capability and changes in the supply chain are plausible reasons why a company will start looking for a distribution centre.

**4.3.2 Evaluation of the second proposition**

The second proposition is:

When a company is aware of the demand of a distribution centre, they will start looking for different (locations for) distribution centres on basis of intermediating companies.

To evaluate the second proposition, first the information about cooperation between different parties in selecting a distribution centre from the interviews will be elaborated. After that the proposition will be evaluated.

A lot of information have been gained during the interviews. First, the parties involved in location selection will be mentioned. After that, there will be explained what an actor analysis is and how it is applied to get more insight in the cooperation between the different parties. Finally, the proposition will be evaluated.
Parties involved in location selection

As already described, PoR sees the following parties:

- Users of the distribution centre
- Owners of the distribution centre
- Real estate companies
- Port of Rotterdam

PoR prefers to have influence on which party will be settled within the port area. PoR wants to attract cargo flows by the use of distribution centres, but in a manner that it maximizes the throughput. It can possibly be the case that a distribution centre will be used for storage and goods will only flow in or out after a couple of years. This can sometimes be the case for so called commodities, like cacao, coffee and non-ferro materials (tin, aluminium, lead). PoR does not desire this because that does not create flow.

As already described, also other parties are of importance in selecting a location for a distribution centre. Within The Netherlands the following can be distinguished:

- National level acquisition parties like:
  - NFIA (Netherlands Foreign Investment Agency)
  - NDL (Nederland Distributieland)
- Provincial level acquisition parties like:
  - BOM (Brabantse Ontwikkelings Maatschappij)
  - LIOF (Limburgse Investerings- & Ontwikkelingsmaatschappij)
- Regional / Municipality level acquisition parties like:
  - REWIN (Regionale Ontwikkelings Maatschappij West-Brabant)
  - Rotterdam partners
- Inland terminals
- Consultancy companies
- Transportation companies

From the cases above, it becomes clear that there are a lot of parties involved in location selection and this involvement even has influence on the final selection for a location. Since quite a lot of parties are involved in making a decision in location selection, it is
helpful to analyse those parties and the relationships between them. A party can be seen as an actor with own interests and means. In this part of the report, parties that are involved in making a decision in location selection will therefore be analysed according to an actor analysis. First, this analysis will be explained. After that, some findings will be described and based on this, an advice about the role of PoR will be discussed.

**Explanation of actor analysis**

When quite a lot of parties are involved in making a decision, it is helpful to know the objectives and motivation of those parties (Enserink, Hermans, Kwakkel, Thissen, Koppenjan, & Bots, 2010). By doing an actor analysis, the feasibility and potential to implement policy options can be assessed. Insight can be given into the opportunities and threats in the issue of interest.

The method chosen and executed for the actor analysis is a method with an initial scan of the actor network. This covers also the network structure and perceptions of actors instead of only the typical focus on the dimensions of power and interests of actors.

With the actors mentioned above, the following steps will be executed:

1: Mapping formal relations
2: Making problem formulations of actors
3: Analyse interdependencies

These steps can be found in appendix 3 and the results will be described below.

**Map of the formal relations**

On national level, the NFIA, NDL are of importance. The NFIA is an operational unit of the Dutch Ministry of Economic Affairs. Throughout the years it has supported thousands of companies from all over the world to successfully establish their business in the Netherlands (Netherlands Foreign Investment Agency, 2015). While the NFIA is focussing on all kind of activities (sales, research & development, etc.) they cooperate with NDL who focusses only on the logistics service. Within The Netherlands, NDL is also a knowledge platform (NDL, 2015)

On provincial and regional/municipal level, there are parties with similar tasks like BOM, LIOF, REWIN and Rotterdam Partners.
The relationship between PoR and the owners of distribution centres within the port of Rotterdam is that the owners make use of the land within the port and PoR wants to attract goods by the distribution centres. The owners of distribution centres hire the distribution centres to shippers and logistic service providers. Logistic service providers can be owners of distribution centres themselves, but shippers are rarely owners of distribution centres themselves. A real estate company can be involved as an intermediating company between the owners of distribution centres and shippers and/or logistic service providers. Sometimes two real estate companies are involved, since owners of the distribution centres use them as a representative and the users (logistic service providers as well as shippers) use them as advisor. Owners and users don’t have to make use of a service of a real estate company in case they have the knowledge or means themselves.

Transportation companies (in truck transportation, barge transportation, rail transportation) transport goods on behalf of the shippers or logistic service providers. In case shippers don’t manage the logistics themselves, they make use of the services of a logistics service provider. Shippers sometimes consult consultancy companies.

Logistic service providers and shippers make use of workforces in their distribution centres.

The relations described here are represented in Figure 16. It becomes clear that there are a lot more relations than the ones described by PoR. The initial relationship is represented in bold.
Figure 16: Formal relations of parties involved in location selection decisions
From the map with formal relations it becomes clear that shippers and logistic service provider looking for a (location for a) distribution centre are in direct contact with acquisition parties and real estate parties. Shippers who outsource logistic activities are in contact with logistic service providers. Owners of distribution centres can do intermediating activities for their facilities on their own, or real estate companies can represent them. A real estate company can advise logistic service providers and shippers when they don’t have the knowledge themselves. One can observe that PoR does not have a central place in the network of parties. For PoR, it becomes clear that there can be a chain of parties who are involved in selecting a location before they even know that a certain party have interest in a distribution centre in the port of Rotterdam. The longest chain is represented in Figure 17.

![Figure 17: Possible chain of parties involved in location selection](image)

**Interests and interdependencies**

From the actor analysis, it becomes clear that every party in this chain has its own interest. The owner of the distribution centre wants the distribution centre to be in use, since that will generate profit. In case the distribution centre does not exist, the owner only wants it to be built at a location and in a way that fits with his idea about a good investment (suitable for a next user, having knowledge about the area of interest). The real estate company who is representing the owner of the distribution centre wants to couple the demand and supply for distribution centres in order to be on duty for his client (which can be the owner of the distribution centre or the party that will use the distribution centre). The logistic service providers and shippers who will use the distribution centre want the distribution centre to be on a position that fits their interests.

It is clear that the interest of the user of the distribution centre (using a distribution centre that fits the supply chain) does not always fit the interest of the owner of the distribution centre (making profit on the distribution centre).
Evaluation of the proposition

This proposition seems to be a very reasonable one. And this proposition can be supplemented with the effects of intermediating companies on the selection of (a place for) a distribution centre according to the results of the case studies.

The interviews show that it is very intangible how the contacts are established between the party that is looking for (a location for) a distribution centre and the intermediating companies. This can be in several ways and seems to be based on randomness. According to Neele-VAT, contact with prospective customers can arise at exhibitions and trade shows for example and from all kinds of other contacts. ProDelta, Dudok and Borghese Vastgoed are intermediating companies that find their customers in a variety of ways. They find them through their network, via brokers, via previous clients, via consultancy companies, etc.

Intermediating companies have their own visions. ProDelta for example invests at places of which they think it is a good place for a customer to have a distribution centre, without already having found the client. Dudok invests in distribution centres close to terminals because they are convinced that a terminal near by a distribution centre is of added value. These visions are not necessarily the visions of the customers and it is not applicable to every specific customer.

Besides that, intermediating parties have interests that are not of interest for the customer. Parties who are investing in distribution centres don’t want to realise a distribution centre that is too much focused on one customer. This is one of the findings in the cases of Borghese and Kloosterboer. This implies that the desires of the company that is looking for a distribution centre is bounded by the requirements of the investing party. Borghese only invests in areas they have knowledge about. This implies that intermediating parties might be limited to the area of which they have knowledge about. In addition to that, investing companies consider it important to have the possibility to expand.

Intermediating companies are useful in the selection of a distribution centre. When foreign companies want to start selling their product in Europe, they want to start doing this with local logistic service providers (as found in the case of BOM). According to NDL, they look at Europe as one entity.
The information above can be validated by information from the Stec group. According to the Stec group (Geffen & Ploem, 2015), the shipper has a strong influence on the location selection of a logistic service provider on the one hand and on the other hand, the logistic service provider influences the location of a shipper. For both parties, shipper as well as logistic service provider, the role of the real estate company is significant.

**4.3.3 Evaluation of the third proposition**

The third proposition is:

The considerations for the different (places for) distribution centres will be made on basis of the following criteria:

- Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour

To evaluate the third proposition, first the information about the criteria in selecting a location for a distribution centre from interviews will be elaborated. After that the proposition will be evaluated.

**Information about important criteria in location selection from the interviews**

It has been found that multiple criteria are important in every case, but the relative importance depends. Every criteria will be mentioned and there will be described in which cases it have been taken into account to get to know a bit more insight in the importance.

Costs for land, operation and transportation

This criterion is very frequently occurring in the cases. Kloosterboer mentions the real estate value. Neele-VAT Logistics mentions explicitly the heights of the permits. Crocs mentions the costs regarding the flow of incoming and outgoing goods besides the costs
of the distribution centre itself. According to ProDelta and Borghese Logistics, the costs mentioned by Crocs are important for their customers. BOM also mentions the costs of the distribution centre itself and Dudok mentions the transport costs to be important. BTT mentions the land costs and also the total costs of transportation are important. NDL mentions the cash-flow and tax issues, which are also related to costs of operation.

Presence of other companies
The benefits that can be obtained to be surrounded by other companies are important. For Neele-VAT this is important for making use of rest warmth of other companies as well as having mutual security. For Kloosterboer it is important since they need to make use of the collection function of the location and also the available knowledge in the area is of importance for them. According to Dudok, presence of other companies is important to integrate the supply chains of different companies and to bundle packages. BOM mentioned the case of Tesla. For Tesla, the proximity of automotive centres has been taken into account. Huawei selected the location based on the presence of other companies in that area. According to BTT, the focus is on bundling cargo flows.

Infrastructure and geo location
Intermodal accessibility is mentioned by Neele-VAT, Borghese Logistics, NDL and BTT. BOM mentions that in the case of Tesla the distribution centre must be connected such that it can receive containers.

Distance to origin of the company
The selected location depends to a certain extend to the place of the origin of the company. The intermediating companies only want to invest in a place they already have knowledge about and this is mostly in the area of their origin. Borghese for example don’t want to invest in a location in Venlo, because they don’t know that area. In other cases, it can also be that the distribution centre should be within a limited distance of the headquarter, like with one of the customers of Kloosterboer. So the selected location depends indeed on the place of origin.

Places for a distribution centre that will be taken into account as first are the port of entry (for a company from abroad) and the area where the company is already located (for a domestic company). In case this area is satisfying, the probability is low that another location will be taken into account which might fit the supply chain better.
Availability of land and possibility to expand
It is of importance for the investing parties Dudok Vastgoed and Borghese Logistics that there is enough space to expand.

Safety
Was not often explicitly mentioned during the cases, only Neele-VAT mentioned social security as an aspect of the presence of other companies.

Government investment conditions
Crocs mentions that tax advantages in the country of consideration will be taken into account. NDL mentions that the cash-flow of importance is and a business minded customs.

Economy and market size
Not mentioned in any of the cases. Probably the market size at the location of the distribution centre is not of importance, but the transportation distance and related costs.

Availability, quality and costs of labour
This seems to be one of the most important criteria. Crocs takes costs regarding labour into account as well as the availability of personnel. BOM mentioned that the costs of personnel were important for Tesla. ProDelta indicates that available personnel is becoming more and more important for their customers. Borghese also mentions the availability of personnel. BOM, NDL and BTT all indicates that availability of personnel and costs for it are of importance.

Evaluation of the proposition
To get more insight in the importance of the criteria, the above information has been put in Table 3 on the next page. A cross means that this criterion is obviously heavily taken into consideration than other factors; an empty box means that this criterion is not explicitly mentioned, but that does not mean that it will not be taken into account to some extent. The criteria that have been mentioned in the majority of the interviews are in bold. Parties have not be grouped since they fit in multiple groups. For example, Pro Delta fits in the group ADR but also in owners and Kloosterboer fits in the group owners as well as users.
Table 3: Important criteria in location selection

<table>
<thead>
<tr>
<th>Costs for land, operations and transportation</th>
<th>Kloosteroer</th>
<th>Nestle VAT Logistics</th>
<th>Ciroc</th>
<th>Pro Delta</th>
<th>Dudol Vestpoed</th>
<th>Benheus Logistics</th>
<th>BOM</th>
<th>MDL</th>
<th>STT</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of other companies</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>5/9</td>
</tr>
<tr>
<td>Infrastructure and geo location</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>5/9</td>
</tr>
<tr>
<td>Distance to origin of the company</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>3/9</td>
</tr>
<tr>
<td>Availability of land and possibility to expand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>2/9</td>
</tr>
<tr>
<td>Safety</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1/9</td>
</tr>
<tr>
<td>Government and investment conditions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>2/9</td>
</tr>
<tr>
<td>Economy and market size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0/0</td>
</tr>
<tr>
<td>Availability, quality and costs of labour</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>6/9</td>
</tr>
</tbody>
</table>
So the most important criteria are ‘costs for land, operations and transportation’, ‘presence of other companies’, ‘infrastructure and geo location’ and ‘availability, quality and costs of labour’.

4.3.4 Evaluation of the fourth proposition

The fourth proposition is:

When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about the criteria.

To evaluate the fourth proposition, first the knowledge about criteria when making a final decision from important actors will be elaborated. After that the proposition will be evaluated.

Information about knowledge of criteria when making a final decision from interviews

In the case of Kloosterboer, the distribution centre had to be within a distance of 20 to 25 kilometres of the plant and a large area was required. The location at the Maasvlakte area fitted these limitations and was on a place that is logical for the next step in the cargo flow. Based on this knowledge about this location, this seems to be sufficient location.

Neele-VAT also indicates that the position related to cargo flows is of importance. Neele-VAT confirmed that residence plays a role at customers. When a company from Amsterdam finds a location for a distribution centre in Amsterdam that is satisfying, the company will not search for another location.

So both the cases of Kloosterboer and Neele-VAT indicates that when a sufficient location has been found, they have enough knowledge to make a final decision. This does mean that they do not have knowledge about all options.

For Crocs, the final decision depends on the investments made in the current location and the present value of it. Besides that, they also take into account the risks for moving. This means that they do not know everything about moving to another location and can only act based on what they know.

Borghese Logistics selected one of their locations because they had good knowledge about that area. On the question why they selected this area the answer was “you cannot
know every area”. This implies that they base the decision on what they know about the area.

This proposition holds for BOM. The final decision should fit the supply chain.

According to NDL, the business case needs to be good. This implies that if a sufficient option has been found, this will be selected.

According to BTT, attracting companies is a lot of lobbying. This implies that the prospective customer continuously needs to be informed about the added value for him on a certain location and that knowledge about the area is of importance.

**Evaluation of the proposition**

For all cases, it appears that they base their final decision on what they know. If this fits the demand, they select a location. Although there might be other suitable locations.

**4.4 Adaptions on the conceptual framework and testing the central hypothesis**

The conceptual framework can be adapted based on findings of the case studies. These findings are the following:

**Importance of intermediating companies**

Companies start looking for a distribution centre in cooperation with intermediating companies. These intermediating companies influence the process with own interests and information they have.

**Important selection criteria**

All criteria that are in the initial framework are of importance. The criteria that are of major importance is ‘costs for land, operations and transportation’. Besides that, ‘availability, quality and costs of labour’ are of importance. The criterion ‘infrastructure’ is of importance as well as ‘presence of other companies’. This will not say that other criteria will not be taken into consideration, but probably not to the same extend as the other criteria.

Companies that are looking for a distribution centre are aware about these criteria before they start searching
**Sufficient final decision based on knowledge about the criteria**

A final decision must be sufficient in order that it should not be further from the origin of a company than a certain distance, it must fit the supply chain, and the business case should be good. Besides that, if there is not enough knowledge about an area, this particular area will not be chosen.

The conceptual framework has therefore been adapted on the following points:

Since the companies that are looking for a distribution centre are aware about their criteria, these criteria are already known in the demand phase. To look for different locations, companies cooperate with intermediating parties. Since these intermediating parties influence the process, this will influence the final decision, therefore a distinction should be made in the intermediating companies.

The adapted conceptual framework can be found on the next page in Figure 18.
Demand for:
- Capacity
- Expansion capability
- Changes in supply chain

Distance to origin of the company

Demand phase

Based on knowledge about the criteria

Final decision

Intermediating company A

Option 1
Option X
Option 2

Intermediating company B

Option 1
Option X
Option 2

Intermediating company C

Option 1
Option X
Option 2

Search phase

Decision phase

Economy and market size

Availability, quality and costs of labour

Government and investment conditions

Costs for land, operation and transportation

Availabilty of land and possibility to expand

Safety

Demand for:
- Capacity
- Expansion capability
- Changes in supply chain

Market size

Distance to origin of the company

Presence of other companies

Infrastructure and geo location

Availability, quality and costs of labour

Economy and market size

Government and investment conditions

Costs for land, operation and transportation

Availabilty of land and possibility to expand

Final decision

Based on knowledge about the criteria

Demand phase

Intermediating company A

Option 1
Option X
Option 2

Intermediating company B

Option 1
Option X
Option 2

Intermediating company C

Option 1
Option X
Option 2

Search phase

Decision phase

Figure 18: Adapted conceptual framework
Validation of adoptions

To validate these adoptions, some additional cases can be referred to, namely the cases of Huawei and Nippon in which recently a decision for a location has been made.

Huawei took into consideration several locations, but finally decided for Eindhoven (Jorritsma, 2015). Brabant is considered to be the gate of Europe and in Brabant, a connection can be found with the existing high-tech sector. The infrastructure is good, the location is sufficient and the developments in the field of smart cities, smart environment and smart mobility are interesting. The arrival of Huawei has been supported by BOM, Brainport Development and NFIA (NDL). So this means that Huawei was partly attracted by infrastructure as well as the existing companies and intermediating companies played a role. This corresponds with the results from the interviews.

The other case which is interesting is the case of Nippon (Ooijevaar, Mail Nippon, 2015). Nippon Express is a logistic service provider from Japan with global services. Nippon Express has distribution centres in the port of Rotterdam. The Maasvlakte area seems to be the best location for the Nippon operation since the transport distances for the incoming containers is short. Because of this, the goods are rapidly available against relatively low transportation costs. Nippon was already operating a distribution centre at the Maasvlakte area and they benefit from the already existing infrastructure and existing knowledge at that location. The availability of the right plot also contributed positively. In the supply chain for Europe for the customer of Nippon is the Maasvlakte area the best location for a distribution centre. The traffic congestion is a currently a negative aspect. This situation will be better in the future when the A15 will be broader and the A4 will be extended, but this will not solve the entire problem. It is hard to find personnel. The collaboration with PoR and Stad Rotterdam contributed positively in making the decision for the port of Rotterdam. The incentives promised by Stad Rotterdam gave a positive contribution to the final decision for a location. This case also corresponds with the results from the interviews and the reasons why the location at Maasvlakte has been chosen matches with the important criteria.
Testing central hypothesis

The central hypothesis was:

Users of distribution centres can be attracted by playing a more active role in acquisition and by improving the information supply about ‘costs for land, operation and transportation’, ‘presence of other companies’, ‘infrastructure and geo location’, ‘distance to origin of the company’, ‘availability of land and possibility to expand’, ‘safety’, ‘government and investment conditions’, economy and market size’ and ‘availability, quality and costs of labour’.

From the case studies, it can be concluded that companies are aware about what is of importance for them. ‘Costs for land, operation and transportation, ‘presence of other companies’, ‘infrastructure’ and ‘availability, quality and costs of labour’ are of major importance. It is very important that parties that are looking for a distribution centre can find information about these criteria.

From the case studies can also be concluded that PoR does not play a central role in the network of parties involved in location selection. Parties get their information from this network by their relations and contacts. If PoR wants to know which companies are looking for a distribution centre (and thus in need for information) they should have more relations and contacts with other parties in the network to ensure that the parties which are looking for a distribution centre will be provided with information about a site for a distribution within the port of Rotterdam.

4.5 Changing supply chains

It is of interest to have insight in the drivers that change supply chains and how this might have an effect on decisions for a location of a distribution centre.

One of the major trends that influences supply chains is e-commerce.

According to Bram Verhoeven of Prologis, the pressure at logistic hotspot regions that are popular for distribution centres is increasing (Dijkhuizen B., Logistiek.nl, 2015). These logistic hotspot regions are within the Randstad, the region of Utrecht and the axis Venlo – Bergen op Zoom.
According to John Manners-Bell, supply chains will increasingly be influenced by e-commerce. By this, logistic service providers will be required to be innovative in the way they provide fulfilment and last mile delivery services (Manners-Bell, 2015).

According to supply chain digital consumers are using multiple channels. From shops to e-commerce. The logistic industry need to adapt (Nabben, 2014).

Another trend that influences the supply chain is sustainability. Customers increasingly prefer products that are produced and sourced in ‘the right way’ (Nabben, 2014).

Van den Broek (van den Broek, 2010) states that in the coming years, it will become increasingly important to ‘green’ the supply chain. She already sees strategies to make transportation more sustainable, to use environmentally friendly packaging materials and to form partnerships to jointly develop green solutions. Also attention is paid to sustainable sourcing. An example of sustainable sourcing is Nike. Nike for examples is changing the materials they use (Green Biz, 2013). They are eliminating hazardous substances and use new sustainable materials. They introduce a tool that can be used by their suppliers. It enables them to manage restricted substances and provides that opportunity to increase water and energy efficiency.

Focus on the customer is becoming important. Supply chain management review found that since the financial crisis, supply chain costs have been cut (Riley, 2012). But the service levels have been negatively affected by this. Companies are currently focusing on how to improve service levels while they attempt to decrease costs.

Rigorous cost-management programmes are being implemented in supply chains. (Supply Chain Movement, 2014)

Collaboration is becoming more and more important. All partners in the supply chain must collaborate and execute as a unified group to respond to challenges (Riley, 2012). Constant feedback and control over the supply chain is of importance. According to supply chain digital, partnerships are becoming more and more important. Manufacturers continuously search for supply chain innovations and gains through partnerships with logistic service providers (Nabben, 2014).

Cees Pronk also emphasizes that connectivity and collaboration are important to meet the demands of the consumers in the future (ABN-AMRO, 2014)
Ships will continue to get bigger. This lowers the unit costs of moving goods. But the reducing number of direct calls because of the small number of ports that is able to support these ships is increasing the costs of shipping from emerging markets (Manners-Bell, 2015)

Also, a shift can be seen in growth patterns. Growth in logistics is no longer from Asia to North America and from Asia to Europe. It will come from elsewhere and will be more fragmented, more unpredictable and more volatile. Economic and population growth will be increasingly centred in cities (Nabben, 2014). Besides that, the labour costs in Asia have been raised and transportation costs are rising. Manufacturing is being brought closer to the end user.

Also the growth within Europe will change the coming years. The major growth takes place in the eastern part of Europe. Because of this, logistic hubs will emerge in the centre of Europe and more cargo flows from Asia will be via the Black Sea or the Trans-Siberian railway line (Supply Chain Magazine, 2013)

In the Netherlands, the demand for large scale, high-quality logistic real-estate will increase (Dynamis, 2015). This is mainly because of the increasing amount of e-commerce developments. Users of distribution centres are looking for large distribution centres with a minimum surface of 30.000m² and a minimum height of 12,5 meter because of the possibility of efficient storage of goods.

About the model of port centric logistics which is called in the Distrivisie are criticisms since the value of intermodal transport may be reduced by port centric logistics and the amount of containers that will be available inland for export will be reduced (Monios & Wilmsmeier, 2012).
5 Validity of the case study research

The case study research needs to be of good quality. To judge the quality of research design, four tests will be described and the corresponding tactics will be mentioned. These four tests are:

1. Construct validity
2. Internal validity
3. External validity
4. Reliability

There will be explicitly mentioned how these tactics have been processed during this research.

Besides that, it is already described in Chapter 2 that the skills of the researcher are of importance in case study research. In this chapter will be claimed why the researcher has been able to execute this research.

5.1 Construct validity

Construct validity is the extent to which the test or the measurement answers the research question. The tactics described by Yin are:

1) Multiple sources of evidence
2) Establish chain of evidence
3) Draft case study report reviewed by key informants

These tactics will be described below and it will be explicitly mentioned whether the validity guaranteed according to every tactic.

5.1.1 Multiple sources of evidence

In case study research, it is advised to use as many sources of information as possible.

There are six sources of information that can be used:

- Documentation
- Archival records
- Interviews
- Direct observations
**Documentation**

All kinds of documents can be used like e-mail correspondence and other personal documents, minutes of meetings, administrative documents, formal studies and articles in the media.

During this research, most of these documents have been used. Information from e-mails, studies, articles have been used and can be found back in the references list.

**Archival records**

Archival records include information about customers, about budget or personnel, maps and charts of the geographical characteristics and survey data.

During this research, all available information about companies have been examined. This included information about customers, and geographical information about the distribution centre. Relevant information have been included in this report.

**Interviews**

Interviews are one of the most important sources of information.

To validate the conceptual framework, interviews have been executed, the interview reports can be found back in the Appendix 2 of this report.

**Direct observations**

Direct observations consist of field visit. This is important to understand the context of the research. Photographs at the case study site can be useful.

All three distribution areas have been visited by the researcher, this gave a lot of insight in the factors important in site selection, like infrastructure and transport distances.

**5.1.2 Chain of evidence**

The chain of evidence means that the derivation of any evidence from initial research questions to ultimate case study conclusions can be followed.

In this report, such a chain can be found. The design of case study research is described in Chapter 2. This design describes that theory and propositions need to be developed in order to be tested by cases. Based on literature, a conceptual framework have been developed in Chapter 3. The steps in which this is done are explicitly mentioned. The conceptual framework formed the basis for the central hypothesis and several propositions. These have been tested by information from interviews and the steps in
which these have been evaluated have been clearly showed in this report. By this, the chain of evidence has been clearly showed in the report.

5.1.3 Draft case study report reviewed by key informants

The distinct case studies have been send to the interviewees.

The interviewee of Borghese gave some comments on the writing style, but no comments about the content. The interviewee of VAT was satisfied with the report about VAT. The interviewee of Kloosterboer made some adjustments which have been processed. BTT made some minor adjustments and BOM also sent back comments that have been processed. Pro Delta, Crocs, Dudok and NDL gave no comments. This indicates that the majority interviewees adopt the case studies.

Since multiple sources of evidence have been used, the chain of evidence is clear and draft reports have been adopted by the interviewees, there can be concluded that this research fulfils the construct validity.

5.2 Internal validity

Internal validity is the extent to which reasoning within the research has been done correctly. The tactics for internal validity described by Yin which are applicable for this research are:

1) Pattern matching
2) Explanation building
3) Addressing rival explanations

Pattern matching

By pattern matching an empirically based pattern will be compared with a predicted one. In this research, this means the extent to which the propositions can be compared with the information from the cases. There can be concluded that the propositions match with the information from the cases. They could even be extended, but the patterns didn’t have to be changed.

Explanation building

Each case should be analysed and an explanation about the case should be build. The goal is to develop ideas for further study. A thorough analyses can be found in Chapter 4 together with the explanations. Further ideas for study can be found in Chapter 8.
Addressing rival explanations

Rival explanations can be used to interpret the findings from the study. This is done at the end of Chapter 7.

The tactics for internal validity have been integrated in analysing the case studies, therefore, the internal validity is guaranteed.

5.3 External validity

When the case study is external valid, the study’s findings are generalizable beyond the immediate case study. This can be tested by the tactic replication logic. This means that two or more cases need to have comparable outcomes. All conclusions are based on two or more cases and therefore, the study’s findings are generalizable. To validate this, further research is needed.

5.4 Reliability

In research, it is of importance that the same findings and conclusions will be found when a second researcher is doing exactly the same as the first researcher. This can be done by the use of a case study protocol and the development of a case study database. According to Chapter 2 a case study protocol should consist of the following topics:

Overview of the case study project

The background information about the project have been described in the introduction.

Field Procedures

Tasks in collecting data have been executed as prescribed by Yin. Access to key interviewees was made possible by Niek Ooijevaar who advised in selecting a representative set of companies according to the specifications as described in Chapter 4.

Case study questions

The questions prepared for the interview can be found in Appendix 1, this ensured the guide during the interviews.

Guide for the case study report

Before data collection, the researcher already thought about the outline and the audience for the case study report.
The references at the end of the report can be considered to be the case study database. The interview questions used during the research can be found back in Appendix 1.

5.5 Skills of the researcher
As already mentioned in Chapter 2, the personality of the researcher is of importance in case study research. Since there is no test to evaluate whether someone is able to execute case study research or not, there will be looked at previous achievements of the researcher.

In spring 2014, the researcher executed research for Heineken in Zoeterwoude with three others. This research was mainly based on interviews. The outcome of the research was satisfying for Heineken. During summer 2014, the researcher executed research in China for Boskalis and Dockwise together with one other researcher. This research was also based on interviews and the results were also satisfying for the client.
6 Conclusions on the research

To come up with conclusions on the research, general conclusions will be given. In 6.1 the general conclusions of this research will be given. In 6.2, the problem statement and the related research questions will be recalled. After that, the research questions will be answered and finally the conclusions on the problem statement will be given.

6.1 General conclusions

The first general conclusion that can be made from this research is that the combination of criteria in site selection is of importance and the value of one factor influences the other. The combination of factors should be balanced.

The second general conclusion is that criteria in site selection have been put in the context of decision making and according to this research it is plausible that the role of intermediating parties is relevant in site selection and affects the final decision.

6.2 Recall of the problem statement and research questions

The problem statement of this research is:

*How can PoR ensure that the land for distribution centres will be well filled in a way that it keeps generating and binding cargo flows to the port?*

The related research questions are:

- Which factors are critical in the choice of a location of a distribution centre of a set of companies identified as relevant actors for this project?
- Which parties are involved in location selection for distribution centres and how are they related?
- What is the context/situation in which locations for distribution centres will be selected?
- What factors are going to change cargo flows that might affect the locations / functions of distribution centres?

In the following section of this chapter, the research questions will be answered and the conclusion on the problem statement will be given.
6.3 Answers on the research questions

*Which factors are critical in the choice of a location of a distribution centre of a set of companies identified as relevant actors for this project?*

The locations for distribution centres will be considered according ‘costs for land, operation and transportation’, ‘presence of other companies’, ‘infrastructure and geo location’, ‘distance to origin of the company’, ‘availability of land and possibility to expand’, ‘safety’, ‘government and investment conditions’, ‘economy and market size’, and ‘availability, quality and costs of labour’. Factors which are critical in the choice of a location of a distribution centre are ‘costs for land, operations and transportation’, ‘availability, quality and costs of labour’, ‘infrastructure’ and ‘presence of other companies’. Other factors are critical in the choice of a location of a distribution centre are the role of the intermediating parties and the knowledge about the factors.

*Which parties are involved in location selection for distribution centres and how are they related?*

Parties that are involved in selecting a location for a distribution centre are users, owners, real estate companies, acquisition parties on national, provincial, regional level. Besides that, the inland terminals and consultancy companies can influence the decision for a location. Next to that, transportation companies are active in this field.

The parties involved in location selection are several and they all have their own interests. The user of the distribution centre (which can be a logistic service provider or a shipper), the owner of the distribution centre (which can be an investor, but also a logistic service provider), real estate companies that can either represent the owner of the distribution centre or advise the prospective user of the distribution centre. Sometimes logistic service providers have enough knowledge or means themselves, so they don’t need a real estate company to represent or advise them.

Owners of distribution centres want their distribution centres to be in use. They invest according their investment vision (this can be a specific region or they require certain demands on the distribution centre) and their interests does not necessarily match with the interests of the user of the distribution centre.

There are also national acquisition companies that are in contact with internationally operating shippers and logistic service providers as well as with real estate companies.
The acquisition companies are active in finding companies which want to find a location in The Netherlands.

**What is the context/situation in which locations for distribution centres will be selected?**

For selecting a location for a distribution centre, three steps were distinguished in decision making: The first step is the demand phase in which a company becomes aware of needed capacity, wants to expand or wants to change the supply chain. The company is also aware of the selection criteria. In the second step, the search phase, companies consider several options. From the first to the second step, intermediating parties are acting that influence the selection. Finally the companies enter the decision phase in which they make a final decision for a company. This decision is not based on 100% rationality since there are a lot of in transparencies.

**What factors are going to change cargo flows that might affect the locations / functions of distribution centres?**

There are drivers that will change the supply chains in the future as well as the demand for distribution centres. Very important is e-commerce and focus on the customer. Because of this, distribution centres for consumer goods will be preferred to be closer to the customer and collaboration in the entire supply chain becomes even more important. Also, a shift can be seen in growth patterns. The major growth of distribution centres for consumer goods will take place in the eastern part of Europe and cargo flows and logistic hubs will change. Logistic hubs will emerge in the centre of Europe and more cargo flows from Asia will be via the Black Sea or the Trans-Siberian railway line.

**6.4 Conclusion on the problem statement**

Now that the research questions have been answered, a conclusion on the problem statement can be made.

The problem statement is:

**How can PoR ensure that the land for distribution centres will be well filled in a way that it keeps generating and binding cargo flows to the port?**

PoR can ensure the land for distribution centres will be well filled in a way that it keeps generating and binding cargo flows to the port.

Therefore, they have to prove that they are of added value for the customer.
The major criteria are ‘costs for land, operations and transportation’, ‘availability, quality and costs of labour’, ‘infrastructure’ and ‘presence of other companies’. PoR has to emphasize what the quality of a distribution centre is within the port of Rotterdam based on these criteria for the specific customer.

Besides that, PoR needs to make sure that the customer will find this information so that a location can be selected on a more rational basis. In case PoR doesn’t want to be dependent fully on the representation by other parties involved in location selection, PoR has to carry out the characteristics of the port of Rotterdam actively. Currently, PoR enters the picture after considerations have been done. PoR needs to make sure that companies that are looking for a distribution centre can find information about the port of Rotterdam. So PoR has to present this information at expositions, via the website, but also inform the logistic service providers, real estate companies, owners of the distribution centres, consultancy companies and acquisition companies very well about their vision on how to be of added value in the supply chain of the customer.

In case PoR wants to actively provide a prospective customer with this information, PoR needs to have a better relationship with the national acquisition parties who are directly in contact with companies that might be willing to locate in The Netherlands.
7 Advice and recommendations for PoR

After evaluating the hypothesis by the end of Chapter 4 and the conclusion of the research in Chapter 6 an advice and some recommendations will be made for PoR in this chapter.

7.1 The importance of providing information and working on relations

In the conclusions in Chapter 6 is already stated that there are several parties involved in the selection of (a location for) a distribution centre. Besides owners of distribution centres and users of distribution centres that have different interests, there are also intermediating parties that influence the selection. Finally the companies make a decision based on the information they have about the different options.

The information about the demand for distribution centres is at the acquisition companies, logistic service providers and real estate companies. The customer will get information about the different options from those parties and probably also via the internet and exhibitions. PoR needs to make sure that the customer can find the information about the port of Rotterdam in order to make a decision in which a location in the port of Rotterdam has been considered.

PoR has to carry out the characteristics of the port of Rotterdam actively. They need to make sure that companies that are looking for a distribution centre can find information about the port of Rotterdam. So PoR has to present this information at expositions, via the website, but also inform the logistic service providers, real estate companies, owners of the distribution centres, consultancy companies and acquisition companies very well about their vision on how to be of added value for the customer.

The major criteria are ‘costs for land, operations and transportation’, ‘availability, quality and costs of labour’, ‘infrastructure and geo location’ and ‘presence of other companies’. PoR has to emphasize what the quality of a distribution centre is within the port of Rotterdam based on these criteria.

In case PoR wants to actively provide a prospective customer with this information, PoR needs to have a better relationship with the national acquisition parties who are directly in contact with companies that might be willing to locate in The Netherlands.
The current situation has already been discussed. This concerned the role of PoR, the roles of other actors. This will be repeated shortly. The demand from the customer will be described accordingly. Based on this, a conclusion will be drawn on how PoR should adapt the current role, position and/or attitude to improve the facilitating function.

7.2 Current role PoR

Currently, PoR has a quite reactive attitude. They are not very active in acquiring companies. Their function is to create a climate that is attractive to settle down for enterprises. They develop infrastructure and provide information.

As already described in Chapter 4, PoR aims to optimise the distribution in the port and the region around the port. They therefore developed the document Distrivisie Rotterdam in order to bind cargo flows to the port of Rotterdam. Within the port of Rotterdam, the focus is on ADR, food and high-quality consumer goods. In order to connect the port of Rotterdam with other areas that are suitable for distribution centres, the cooperation exists in form of ‘DelTri Platform’, ‘Infodesk Bedrijventerreinen Zuid-Holland’ and regional development parties. In order to bind cargo flows with the hinterland, PoR is involved in three projects ‘Nextlogic’ (to optimise inland shipping) ‘Inlandlinks’ (to optimise the network of inland terminals) and ‘Railincubator’ (to optimise the use of the railway network).

7.3 Demand of companies

Companies that are looking for a distribution centre are doing this by the help of intermediary parties. These parties find each other through their network and contacts. Intermediating parties have own interests while it is of importance for the company in search of a distribution centre that the distribution centre should fit the demands of the company.

7.4 Future role of PoR

The current role should be supplemented. PoR should continue improving the attractive climate to settle down for enterprises and they should continue developing infrastructure and providing information. A lot of achievements can be made in the provision of information.

It is important to carry out characteristics based on the major criteria.
In order to get to know which companies are looking for a distribution centre, PoR should work on the network. They should have more contacts. When they are aware which companies are interested in a location for a distribution centre, they can provide them the information about the port of Rotterdam on basis of the important criteria already described. And once in contact with a prospective company, they can do custom-made offers. On the other hand, they can decide not to provide information when PoR is not interested in the interested company. As already stated in this report, parties that do not belong in the port of Rotterdam should not be attracted.

Currently, cooperation already exists within the DeTri region, ‘infodesk bedrijven terreinen Zuid-Holland’, and regional acquisition companies. Besides that, cooperation can be found in chain optimisation in the form of Nextlogic, Inlandlinks, and railincubator. There should be more contacts with the other parties active in location selection, like NDL and other acquisition companies, real estate companies and logistic service providers. PoR should be able to handle quickly when a potential client presents themselves by presenting why the port of Rotterdam is a good location for a distribution centre for this particular client.

7.5 Future focus on ADR, food and consumer goods

PoR is currently focusing on ADR, food and consumer goods. In the future, distribution centres for consumer goods will be more inland because of the trend in e-commerce. The interest in the port of Rotterdam will diminish. PoR should mainly focus on ADR and food. In the document Distrivisie is already indicated that a shortlist of ADR customers has been made. This should be used to focus on their demands. Also in Distrivisie is that effort has been put to involve brokers when prospective clients have been found. This should be continued since this strengthens the network. Also a list with contact information for other location in the area has been made. These persons should be contacted to get more insight in the qualities of those areas and what their vision is.

In the document Distrivisie is already indicated that a commercial presentation Distribution has been developed. This should be supplemented with information about the criteria ‘costs for land, operations and transportation’, ‘availability, quality and costs of labour’, ‘infrastructure’ and ‘presence of other companies’. Also, some unique selling points can be mentioned related to dangerous goods and food. Additional research can therefore be done.
PoR doesn’t see itself as a party that should analyse the position of a distribution centre within the demands of the customer. First because they think other parties can do that, but second because the result can be that a company might be better off at another location, the cargo can be transported via another port. This is not according to the interests of PoR since they prefer the situation in which cargo flows will be via the port of Rotterdam. On the other hand, parties might be interested in a hinterland location advised by PoR and still transport their cargo via the port of Rotterdam since they become convinced about the good relationship of PoR and the hinterland location. Since it becomes more important in the future that parties in the supply chain cooperate, cooperation between PoR and hinterland locations might attract cargo flows.

PoR should become aware about the existing knowledge about competition between ports related to hinterland locations and the extent to which they distinguish themselves from competing ports herein. Based on this the anxiety that cargo flows will go via another port will turn out to be well-founded or unfounded. In case the anxiety appears to be well-founded, advise can be given what should be done to distinguish the port of Rotterdam from other ports to attract more cargo flows together with locations in the hinterland. In case the anxiety appears to be unfounded, advise can be given how PoR should profile itself to attract cargo flows together with hinterland locations.

Not working on the network will not be a good idea. By not becoming more active, PoR will not get to know in an earlier phase about the demand for distribution centres and they don’t know which companies to provide with the information they would like to have.
8 Reflection
This research started with a literature review to research already done in site selection. Nine criteria have been identified that are important. Two aspects about these criteria are of interest for further research.

Firstly, in the existing research in which factors have been given a value, those values have been given independently. From this research, it appears that the combination of factors is of importance and the value of one factor influences the value of another. The combination of factors is not necessarily the total value of all factors.

Secondly, these criteria have been put in the context of decision making and according to this research it is plausible that the role of intermediating parties is relevant in site selection. This delivered a valuable insight in the context of decision making and can be used for further research. Since the generalizability of the research presented in this report is limited future research is valuable. This can be done at another port (for example the port of Hamburg) and also at another location for logistics.

The decision-making model of Simon appears to be applicable in this research. The three steps can be distinguished although it might be that there is a bit of overlap.

Information from interviews is dependent on the human interaction between the interviewer and the interviewee. In most of the cases, the atmosphere felt good and confident.
References
(2009, March 20). Retrieved April 7, 2015, from The Economist:
http://www.economist.com/node/13350892
(2011, November 11). Retrieved April 13, 2015, from What are the Pros and Cons of...:
http://www.prosandconsof.net/what-are-the-pros-and-cons-of-qualitative-research/
(2013, March 25). Retrieved April 17, 2015, from Green Biz:
(2014, February 24). Retrieved April 17, 2015, from Supply Chain Movement:
(2015). Retrieved April 7, 2015, from Principles of Management:
http://www.mbaofficial.com/mba-courses/principles-of-management/what-are-the-decision-making-models/
(2015). Retrieved March 18, 2015, from Netherlands Foreign Investment Agency:
http://www.nfia.nl/About_NFIA.html
Alberto, P. (2000). The Logistics of Industrial Location Decisions: An Application of the
for location planning for urban distribution centers under uncertainty.
Mathematical and Computer Modelling (53), 98-109.
Qualitative and Quantitative Methods:
http://catalog.flatworldknowledge.com/bookhub/reader/3585?e=blackstone_1.0-ch10_s02

Bliek, J. (2015, March 6).
de Weerd, P. (2012, December 13). Retrieved 7 May, 2015, from Logistiek.nl:
	http://www.logistiek.nl/warehousing/nieuws/2012/12/tesla-motors-opent-edc-in-tilburg-10113350
Dijkhuizen, B. (2013, Augustus 22). Retrieved May 7, 2015, from Logistiek.nl:
Dijkhuizen, B. (2015, May 6). Retrieved May 7, 2015, from Logistiek.nl:
Dijkhuizen, B. (2015, April 13). Retrieved April 17, 2015, from Logistiek.nl:


Ooijevaar, N. (2014, 10 22).


  http://www.scmr.com/article/five_supply_chain_trends_that_shaped_2012/


Simon, H. (1986). Retrieved April 7 2015, from Decision Making and Problem Solving:

  http://dieoff.org/page163.htm


dan den Broek, F. (2010). *Green Supply Chain Management, Marketing Tool or Revolution?*


  http://www.asaecenter.org/Resources/eNewsletterArticleDetail.cfm?ItemNumber=38637


Appendix 1: Interview questions (in Dutch)

Interview questions Kloosterboer ............................................................................................. 85
Interview questions Neele-VAT .................................................................................................. 87
Interview questions Crocs ........................................................................................................ 89
Interview questions ProDelta ...................................................................................................... 91
Interview questions Dudok Vastgoed ......................................................................................... 93
Interview questions Borghese Logistics .................................................................................. 95
Interview questions BOM .......................................................................................................... 96
Interview questions NDL ........................................................................................................... 97
Interview questions BTT ............................................................................................................ 98

Interview questions Kloosterboer

Introductie & algemene bedrijfsinformatie
Voorstellen
Onderzoek inleiden
Vragen gesprek op te mogen nemen
Vragen introductie bedrijf en Alex Kloosterboer (zoon Klaas Kloosterboer?)
Kloosterboer is een familiebedrijf sinds de jaren 20. Sinds de jaren 60 ook in Rotterdam gevestigd. Voornamelijk actief in vervoer, distributie en opslag van sappen, vlees, vis, patat. Wereldwijd georiënteerd.
Overzicht van de verschillende locaties. Zijn er locaties die aan elkaar gerelateerd zijn?

Vragen met betrekking tot DCs in Rotterdam (Vierhavensstraat en Maasvlakte)
a) Heeft u deze distributiecentra in eigendom of huurt u het? Als u het huurt, wie is de eigenaar?
b) Kunt u een schatting geven van het jaarlijkse volume in uw loodsen, in pallets / per m² / jaarlijkse doorzet / bezettingsgraad. Zou u dit kunnen splitsen in import en export?
c) Welke modaliteiten gebruikt u voor het vervoer van uw goederen? Kunt u iets vertellen over de huidige modal split en de potentiële modal split?
d) Wat waren destijds de belangrijkste redenen om te kiezen voor deze distributiecentrum?
e) Waren andere locaties destijds ook een optie?
f) Hoe ging de samenwerking met de eigenaar van de grond en/of tussenpartij bij de keuze voor deze distributiecentra?
g) Bent u nog steeds tevreden over deze locatie voor het distributiecentrum en waarom wel of niet?
h) Voldoet het distributiecentrum nog aan uw huidige wensen? Zo nee, wat zijn uw wensen op dit gebied?

Vragen over het zoeken naar alternatieve bedrijfslocaties:
a) Heeft u plannen om uw activiteiten te verplaatsen naar een andere locatie?
b) Zo ja, waarom en naar welke locatie zou dit zijn en op welke termijn?
   Op basis van welke criteria kiest u een nieuwe locatie?
Zo nee, neem aan dat u een nieuwe locatie zoekt. Op basis van welke criteria kiest u voor een bepaalde locatie?

c) Indien van toepassing: Waarom noemt u de Rotterdamse haven niet als mogelijke vestigingslocatie?
d) Zoekt u zelf naar een andere locatie of maakt u gebruik van een intermediair?

Vragen naar afwegingen voor locatie van DC

Vragen over interactie met andere partijen
a) Op welke manier werken jullie? Hoe komt het contact met een nieuwe klant tot stand? Hoe wordt een distributiecentrum voor die klant gekozen?
b) Worden distributiecentra ontwikkeld zodra er een klant is? Of worden distributiecentra gekozen en worden daarbij klanten gezocht. Op basis waarvan vindt u distributiecentra in dat geval interessant?
c) Hoe lang zijn de contracten met klanten?
d) Bij bedrijven zijn vestigingsfactoren ook vaak niet-logistiek gerelateerd. Wordt er bij logistieke dienstverlening puur naar logistieke factoren gekeken bij vestiging van een DC? Of wordt er ook rekening gehouden met de niet-logistieke wensen van de klant. (bv. een Amsterdams bedrijf wat niet in Rotterdam wil zitten)
e) Hoe is de samenwerking met bedrijven als bijvoorbeeld DHL? Wordt er op een bepaalde manier gezocht naar synergievoordelen?
f) Wat zijn volgens u de unique selling points van de haven van Rotterdam? Heeft u bepaalde wensen als het gaat om de samenwerking met Port of Rotterdam?

Vragen over de website
a) Bezoekt u de website van het havenbedrijf wel eens?
b) Naar wat voor informatie zijn bedrijven op zoek die zich willen vestigen in de Rotterdamse haven?
c) Hoe komen ze aan die informatie?

Vragen nog eens contact op te mogen nemen.
Interview questions Neele-VAT

Introductie & algemene bedrijfsinformatie
Voorstellen
Onderzoek inleiden
Vragen gesprek op te mogen nemen
Introductie Neele-VAT (Familiebedrijf, Ruud Vat startte in 1975 als ondernemer, 1985 eerste DC in Waalhaven, Europees georiënteerd, goederensegmenten: ADR, electronica, chemicalien, fast moving consumer goods, bulk.) Vragen of het overzicht van DC’s wat ik heb gemaakt klopt.

Vragen met betrekking tot de huidige DCs
a) Heeft u de DC’s in eigendom of huurt u het? Als u het huurt, wie is de eigenaar?
b) Kunt u voor de DC’s in Rotterdam een schatting geven van het jaarlijks volume in het DC. In pallets per m² / jaarlijkse doorzet / bezettingsgraad. Zou u dit kunnen splitsen in import en export?
c) Ik heb gelezen dat u multimodaal transport stimuleert. Er wordt gewerkt aan een zijlaadcontainer voor op het spoor. Kunt u iets vertellen over de huidige modal split en de potentiele modal split?
d) Hoe lang gebruikt u de huidige DC’s?
e) Wat waren destijds de belangrijkste redenen om te kiezen voor deze locaties en deze DC’s.
f) In hoeverre is de interne baan op de maasvlakte in uw voordeel?
g) Waren andere locaties destijds ook een optie?
h) Hoe ging de samenwerking met de eigenaar van de grond en/of tussenpartij bij de keuze voor deze DC’s.
i) Bent u nog steeds tevreden over deze locaties en waarom wel of niet?
j) Voldoen de DC’s nog aan uw huidige wensen? Zo nee, wat zijn uw wensen op dit gebied?

Vragen over het zoeken naar alternatieve locaties
a) Heeft u plannen om uw activiteiten te verplaatsen naar een andere locatie?
b) Zo ja, waarom en naar welke locatie zou dit zijn en op welke termijn?
   Op basis van welke criteria kiest u een nieuwe locatie?
   Zo nee, neem aan dat u een nieuwe locatie zoekt.
   Op basis van welke criteria kiest u voor een bepaalde locatie?
c) Hoe belangrijk is de aanwezigheid van andere bedrijven bij het kiezen van een locatie? En indien dit belangrijk is, voor welke bedrijven geldt dit? Wordt er op een bepaalde manier gezocht naar synergievoordelen met bedrijven zoals bijvoorbeeld DHL?
d) Zoekt u zelf naar een andere locatie of maakt u gebruik van een intermediair?

Vragen over interactie met andere partijen
a) Op welke manier werken jullie? Hoe komt het contact met een nieuwe klant tot stand? Hoe wordt een distributiecentrum voor die klant gekozen?
b) Worden DC’s ontwikkeld zodra er een klant is? Of worden DC’s gekozen en worden daarbij klanten gezocht? Op basis waarvan vindt u een DC in dat geval interessant?
c) Hoe lang zijn contracten met klanten?

d) Vestigingsfactoren zijn deels ook niet-logistiek gerelateerd. Wordt er bij logistieke dienstverlening puur naar logistieke factoren gekeken bij het kiezen van de locatie voor een DC? Indien dit niet zo is, kunt u aangeven in hoeverre er rekening wordt gehouden met de niet-logistieke wensen van de klant (bijvoorbeeld een Amsterdams bedrijf wat het DC graag in Amsterdam wil hebben)

e) Wat zijn volgens u de unique selling points van de haven van Rotterdam? Heeft u bepaalde wensen als het gaat om de samenwerking met Port of Rotterdam?

Vragen over de website

a) Bezoekt u de website van het havenbedrijf wel eens?

b) Naar wat voor informatie zijn bedrijven volgens u op zoek die zich willen vestigen in de Rotterdamse haven?

c) Hoe komen ze volgens u aan die informatie?

Vragen nog eens contact op te mogen nemen
Interview questions Crocs

Voorstellen – vragen op te mogen nemen

1) Vragen met betrekking tot algemene bedrijfsinformatie:
   b) Hoelang bent u in Nederland gevestigd?
   c) Wat is de omvang van uw distributiecentrum?
   d) Welke activiteiten verricht u op deze locatie?
   e) Crocs is in 90 landen gevestigd. Wat is de relatie tussen de activiteiten op deze locatie en die andere locaties?

2) Vragen met betrekking tot het huidige distributiecentrum:
   a) Heeft u dit distributiecentrum in eigendom of huurt u het? Als u het huurt, wie is de eigenaar?
   b) Kunt u een schatting geven van het jaarlijkse volume in uw loods, in pallets / per m² / jaarlijkse doorzet / bezettingsgraad. Zou u dit kunnen splitsen in import en export?
   c) Welke modaliteiten gebruikt u voor het vervoer van uw goederen? Kunt u iets vertellen over de huidige modal split en de potentiële modal split?
   d) Hoelang gebruikt u dit distributiecentrum?
   e) Wat waren destijds de belangrijkste redenen om te kiezen voor deze locatie en dit distributiecentrum?
   f) Waren andere locaties destijds ook een optie?
   g) Hoe ging de samenwerking met de eigenaar van de grond en/of tussenpartij bij de keuze voor dit distributiecentrum?
   h) Bent u nog steeds tevreden over deze locatie voor het distributiecentrum en waarom wel of niet?
   i) Voldoet het distributiecentrum nog aan uw huidige wensen? Zo nee, wat zijn uw wensen op dit gebied?

3) Vragen over het zoeken naar alternatieve bedrijfslocaties:
   a) Heeft u plannen om uw activiteiten te verplaatsen naar een andere locatie?
      a. Zo ja, waarom en naar welke locatie zou dit zijn en op welke termijn?
         Op basis van welke criteria kiest u een nieuwe locatie?
      b. Zo nee, neem aan dat u een nieuwe locatie zoekt. Op basis van welke criteria kiest u voor een bepaalde locatie?
   b) Indien van toepassing: Waarom noemt u de Rotterdamse haven niet als mogelijke vestigingslocatie?
   c) Zoekt u zelf naar een andere locatie of maakt u gebruik van een intermediair? Waarom zou u dit wel of niet doen?

34 distributiecentra over de hele wereld, waarvan er 21 door het bedrijf zelf worden gerund en 13 door een derde partij.

Checklist:
Locatiefactoren
Samenwerking andere partijen
Vragen nog eens contact op te mogen nemen
Interview questions ProDelta

1) Vragen met betrekking tot algemene bedrijfsinformatie (verifiëren tijdens interview indien van tevoren op internet is gevonden):
   a) Als ik het goed heb is ProDelta al ruim veertig jaar actief als ontwikkelaar en belegger in logistiek vastgoed (http://www.vastgoedjournaal.nl/bedrijfsprofielen/detail/ProDelta/57/) en jullie zijn voornamelijk actief in de Rotterdamse haven, de provincie Noord-Brabant en de haven van Antwerpen. Bent u alle veertig jaar al actief in de Rotterdamse regio?
   b) Wat is uw bedrijfsomvang (omzet, werknemers, locaties)?
   c) Ik heb begrepen dat het goederensegment waar u zich op richt voornamelijk ‘gevaarlijke stoffen’ (ADR) is. Richt u zich op meerdere goederensegmenten?

2) Specifieke vragen over de intermediatie:
   a) ProDelta is voornamelijk actief in de Rotterdamse haven, provincie Noord-Brabant en de haven van Antwerpen. Is dit uw volledige geografische scope? Of is die wijder? West-Europa / Benelux?
   b) ProDelta is actief als ontwikkelaar en belegger in logistiek vastgoed. Zijn er meer activiteiten die uitgevoerd worden door ProDelta?
      Bijvoorbeeld eigendom, beheer, verhuur, marketing, survey, inrichten DC, (her)ontwikkeling locatie of DC
   c) Heeft ProDelta een bepaalde systematiek? Bv. het ontwikkelen en verkopen? Of het ontwikkelen en beheren?
   d) Ik heb begrepen dat ProDelta actief is op de aanbodkant van de markt. Zo bent u in Tilburg aan het bouwen zonder dat alle eindgebruikers er al zijn (http://www.prodelta.nl/index.php?navid=11&id=1150&pagenum=2). Op basis waarvan vindt u locaties interessant?
   e) Doet u voornamelijk turnkey projecten of werkt u ook wel voor klanten die uitsluitend een locatie zoeken en zelf een distributiecentrum ontwikkelen en inrichten?
   f) Wat zijn voor u de belangrijkste redenen om te investeren in een distributiecentrum op een bepaalde plaats?
   g) Wat zijn volgens u de belangrijkste redenen voor geusers van distributiecentra om een distributiecentrum op een bepaalde locatie te gebruiken?
   h) Forever 21 laat een distributiecentrum bouwen in Bergen op Zoom. Ik heb in een nieuwsbericht gelezen dat Venlo ook een optie was voor Forever 21. Waarom is uiteindelijk gekozen voor Bergen op Zoom en niet voor Venlo?
   i) Wat zijn volgens u de unique selling points van de haven van Rotterdam? Is de grondprijs in de haven van Rotterdam redelijk ten opzichte van de concurrentie?
   j) Hoe gaat het hele proces rondom de aankoop en de verhuur van een distributiecentrum? Wat is de relatie met PoR? Wat is de relatie met de gebruikers? Ik heb gelezen dat partijen als Jones Lang LaSalle transacties begeleiden. Kunt u wat meer vertellen over de relaties en interacties met andere partijen?
   k) Heeft u bepaalde wensen als het gaat om de samenwerking met Port of Rotterdam?

Checklist:
Besluitvormingsproces en relaties andere partijen
Locatiefactoren ProDelta
Locatiefactoren gebruikers
Interview questions Dudok Vastgoed

Voorstellen

1) Vragen met betrekking tot algemene bedrijfsinformatie:
   a) U bent actief in Dordrecht, Rotterdam, Moerdijk en Amsterdam (http://www.dudok.biz/Welkom.htm). Hoelang bent u al actief in de Rotterdamse regio?
   b) Ik zou graag iets willen weten over uw bedrijfsomvang. Van eerdere interviews heb ik begrepen dat de omvang van de vastgoedportefeuille daarvoor relevant is. Op de website heb ik gelezen dat dit momenteel circa 217.605m² is. Dit is denk ik logistiek vastgoed, vastgoed en projectontwikkeling. Ik richt me op logistiek vastgoed. Locaties voor logistiek vastgoed zijn volgens mij in totaal 133.000m². Denkt u dat omzet, werknemers, locatie, etc. ook relevant zijn. Kunt u in dat geval wat meer vertellen?
   c) Wat zijn de belangrijkste goederensegmenten waar u zich op richt?
   d) Heeft u een bepaalde systematiek? Bijvoorbeeld ontwikkelen en verkopen? Of ontwikkelen en verhuren?
   e) Werkt u zowel aan de vraag- als aan de aanbodkant van de markt?

2) Specifieke vragen over de intermediatie:
   a) U bent actief in Dordrecht, Rotterdam, Moerdijk en Amsterdam. Is dit uw volledige geografische scope? Of is deze wijder? West-Europa / Benelux / Nederland?
   b) Wat voor soort activiteiten vallen onder uw intermediatie?
      Bijvoorbeeld eigendom, beheer, verhuur, marketing, survey, inrichten DC, (her)ontwikkeling locatie of DC
   c) Indien u aan de aanbodkant van de markt actief bent, op basis waarvan vindt u locaties interessant?
   d) Doet u voornamelijk turnkey projecten of werkt u ook wel voor klanten die uitsluitend een locatie zoeken en zelf een distributiecentrum ontwikkelen en inrichten?
   e) Wat zijn voor u de belangrijkste redenen om te investeren in een distributiecentrum op een bepaalde plaats?
   f) Wat zijn volgens u de belangrijkste redenen voor gebruikers van distributiecentra om een distributiecentrum op een bepaalde locatie te vestigen?
   g) Wat is het belang van een al bestaand cluster?
   h) Wat is de afweging om voor Moerdijk te kiezen of voor Rotterdam voor gebruikers?
   i) Wat zijn volgens u de unique selling points van de haven van Rotterdam? Is de grondprijs in de haven van Rotterdam redelijk ten opzichte van de concurrentie?
   j) Waarom is de maasvlakte volgens u zo’n interessante plek voor een distributiecentrum?
   k) Ik heb gelezen over de multitrailer die over de maasvlakte gaat. Wat is daar het voordeel van?
   l) Ik heb gelezen in jullie brochure over de Makassarstraat dat er een spoorverbinding is. Hoe zit dat precies? Ik dacht dat dat niet common rail was.
   m) Hoe gaat het hele proces rondom de aankoop en de verhuur van een distributiecentrum? Wat is de relatie met PoR? Kunt uw wat meer vertellen over de relaties en interacties met andere partijen? Bijvoorbeeld makelaar?
n) Heeft u bepaalde wensen als het gaat om de samenwerking met Port of Rotterdam?

Checklist:
Besluitvormingsproces en relaties andere partijen
Locatiefactoren Dudok en gebruikers
Vragen nog eens contact op te nemen
Interview questions Borghese Logistics

Voorstellen

1) Vragen met betrekking tot algemene bedrijfsinformatie:
   a) Hoelang bent u al actief? Hoelang is dit al in de Rotterdamse regio?
   b) Ik heb begrepen dat uw portefeuille 316.00m² is. Kunt u nog meer vertellen over uw bedrijfsomvang (omzet, werknemers, locaties)?
   c) Wat zijn de belangrijkste goederensegmenten waar u zich op richt?
   d) Kunt u iets vertellen over uw systematiek. Ik heb begrepen dat u ontwikkeld en verhuurd.
   e) Ik heb opgemerkt dat bijna al uw locaties verhuurd zijn (misschien locatie C niet). Investeert u wel eens zonder dat er een eindgebruiker bekend is?

2) Specifieke vragen over de intermediatie:
   a) Voor zover ik weet zijn al uw locaties in Nederland. Is dit uw geografische scope?
   b) Wat voor soort activiteiten vallen onder uw intermediatie? Bijvoorbeeld eigendom, beheer, verhuur, marketing, survey, inrichten DC, (her)ontwikkeling locatie of DC
   c) Indien u aan de aanbodkant van de markt actief bent, op basis waarvan vindt u locaties interessant?
   d) Doet u voornamelijk turnkey projecten of werkt u ook wel voor klanten die uitsluitend een locatie zoeken en zelf een distributiecentrum ontwikkelen en inrichten?
   e) Wat zijn voor u de belangrijkste redenen om te investeren in een distributiecentrum op een bepaalde plaats? Pak kaart erbij
   f) Wat zijn volgens u de belangrijkste redenen voor gebruikers van distributiecentra om een distributiecentrum op een bepaalde locatie te vestigen? Ook met kaart erbij
   g) Wat is het belang van een bestaand cluster. Focus u op het creëren van clusters/aansluiten bij clusters.
   h) Ik zag op uw website dat er best vaak iets ontwikkeld wordt voor een specifieke klant. Hoe houden jullie jezelf de mogelijkheden open om het daarna weer te verhuren aan een ander?
   i) Wat zijn volgens u de unique selling points van de haven van Rotterdam? Is de grondprijs in de haven van Rotterdam redelijk ten opzichte van de concurrentie?
   j) Hoe gaat het hele proces rondom de aankoop en de verhuur van een distributiecentrum? Wat is de relatie met PoR? Kunt u wat meer vertellen over de relaties en interacties met andere partijen? Bijvoorbeeld de makelaars?
   k) Heeft u bepaalde wensen als het gaat om de samenwerking met Port of Rotterdam?

Checklist:
Besluitvormingsproces en relaties andere partijen
Locatiefactoren Borghese en gebruikers

Vragen nog eens contact op te nemen
**Interview questions BOM**

- Welke plekken zijn in Brabant populair als locatie voor distributiecentrum? En waarom?
- Hebben jullie een focus op bepaalde bedrijven bij de werving?
- Hoe worden contacten gelegd met bedrijven die willen vestigen?
- Wat voor partijen zijn er nog meer betrokken bij vestigingsvraagstukken?
- Op basis waarvan kiezen bedrijven die willen vestigen?
- Werken jullie samen met mainports zoals die van Amsterdam, Rotterdam en Antwerpen? En bv Ruhrgebied?
- Als bedrijven zelf gaan zoeken? Hoe zoeken ze dan?
- Wat voor bedrijven willen vestigen in Brabant? En waarom?
- Wat voor bedrijven willen juist niet vestigen in Brabant? En waarom niet?
- Zijn bedrijven in Brabant tevreden over hun locatie? Waarom wel of niet?
- Zijn er bedrijven van plan om te verplaatsen? Zo ja, waarom?
Interview questions NDL

Voor mijn afstudeeronderzoek onderzoek ik hoe het havenbedrijf van de haven van Rotterdam de faciliterende functie met betrekking tot distributiecentra kan verbeteren.

NDL geeft buitenlandse bedrijven advies met betrekking tot distributie in Europa.

- Hoe benaderen jullie bedrijven?
- Als bedrijven zelf gaan zoeken in het buitenland, hoe zoeken ze dan?
- Op basis waarvan kiezen bedrijven een locatie voor hun distributiecentrum?
- Welke partijen worden nog meer betrokken bij vestigingsvraagstukken?
- Hoe zit het momenteel met kennisuitwisseling tussen nationale acquisitiepartijen (NFIA+NDL), provinciale acquisitiepartijen (BOM, LIOF) en gemeentelijke acquisitiepartijen?
- Kent u partijen die Rotterdam hebben overwogen als vestiging voor hun distributiecentrum, maar dit uiteindelijk hebben gekozen voor een andere locatie? Waarom hebben zij dit gedaan?
- Voor welke bedrijven is de haven van Rotterdam een goede plek voor een distributiecentrum? En waarom?
- Hoe zou Port of Rotterdam de faciliterende functie met betrekking tot distributiecentra kunnen verbeteren?
- Wat zijn trends die supply chains in de toekomst veranderen?
Interview questions BTT

- Hoe is de samenwerking met PoR?
- Zijn de barge en rail terminals gebouwd ‘op risico’? Of waren er een aantal verladers die sowieso gebruik wilden maken van de diensten die jullie zouden gaan aanbieden en partijen die sowieso een opslag/distributiecentrum wilden in Tilburg?
- Wat voor bedrijven willen hun DC hier vestigen? En waarom is dit daar een goede plek voor?
- Kent u partijen die Rotterdam hebben overwogen als vestigingsplaats voor een DC, maar uiteindelijk voor Tilburg hebben gekozen? En waarom?
- Voor welke bedrijven denkt u dat Rotterdam een logische plaats is voor een DC?
- Hoe vinden jullie nieuwe klanten?
- Is er samenwerking met andere logistieke hotspots? Hoe is de samenwerking met PoR?
Appendix 2: Interview reports

In this appendix, information from the interviews can be found. After each interview report, a reflection of the case with the propositions can be found.

Kloosterboer ................................................................................................................................................. 99
Neele-VAT ................................................................................................................................................... 103
Crocs .............................................................................................................................................................. 106
Pro Delta ...................................................................................................................................................... 111
Dudok ............................................................................................................................................................ 114
Borghese Logistics ...................................................................................................................................... 115
BOM ............................................................................................................................................................... 119
NDL ................................................................................................................................................................. 122
BTT ................................................................................................................................................................. 124

Kloosterboer
(Kloosterboer, 2015)

Information about Kloosterboer and their considerations in selecting a location for a distribution centre

General description of Kloosterboer
Kloosterboer is a family owned company which is specialized in the transportation, distribution and storage of juices, meat, fish, and chips. They are global oriented.

Relationship of Kloosterboer with port of Rotterdam
Kloosterboer has three refrigerated distribution centres in Rotterdam. One near the city centre at Vierhavensstraat, one at the Reeweg and the last one at the Maasvlakte area. They own these distribution centres themselves. The construction and exploitation is done by Kloosterboer themselves.

Distribution centres of Kloosterboer
Kloosterboer has the following distribution centres within The Netherlands:
185.000m³ at Harlingen
470.000 m³ at Velsen-Noord
400.000 m³ at the Maasvlakte area
120.000 m³ at Elst
175.000 m³ at Ijmuiden
55.000 m³ at Vierhavensstraat Rotterdam
1.700.000 m³ at Nieuwedorp
60.000 m³ at Poeldijk

Outside The Netherlands, Kloosterboer has the following distribution centres:
30.000 m³ at in Canada (Bayside)
110.000 m³ at The United States of America (Unalaska)
88.000 m³ at Poland (Gdansk)
405.000 m³ at France (Harnes)
425.000 m³ at Sweden (Bjuv)
Customers of Kloosterboer

Customers of Kloosterboer are producers, traders, importers, exporters, agents or shippers of chilled or frozen perishable foodstuff such as fruit juices, meat, fish, French fries etc. Products need chilled or refrigerated transport and cold storage.

Activities of Kloosterboer in favour of their customers

Kloosterboer does a lot of forwarding. A logistic service provider and a forwarder are similar. The difference is that a logistic service provider owns people, warehouses, etc. A forwarder doesn’t own that. Besides that, they also are a logistic service provider with own refrigerated distribution centres.

In the past, distribution centres have been built at risk because the probability was high that the distribution centre should be used in the future. After completion, a lot of different customers made use of these distribution centres. Nowadays, that is not the case anymore. For Kloosterboer, preferably two or three customers are needed to start building a distribution centre. It might cause a problem when the distribution centre is too much focussed to one customer, because it needs to be used by another customer after the contract period.

Contracts are most of the time for ten years; it is unlikely that the customer will move after that period. Kloosterboer keeps in contact with the customer very often to stay informed about the plans of the customer.

Description of the process of location choice (steps, selection factors, weight, top-x of most important factors) of Kloosterboer

A location for a distribution centre is always a consideration. It is extremely important; from real estate value and customer perspective. A location also influences the financing of the building.

Opinion of port of Rotterdam as a location for a distribution centre according to Kloosterboer

The distribution centre at the Maasvlakte area has been constructed for one of Kloosterboer’s customers who produce French fries. This customer is located in a small town in the province Zuid-Holland. It was not allowed to locate the coldstore in the area of the plant and town, but it had to be within a distance of 20 to 25 kilometres from that town. There was a large area available at the Maasvlakte area, there was no building restriction on height and this was within the distance of 20 to 25 kilometre of the plant. Besides that the Maasvlakte area is a good location for export in containers. Additional advantage for Kloosterboer was the possibility to make a combination with import of goods.

Foreign customers want to store their goods in the neighbourhood of the port. Rotterdam has a collection function. From all corners of the world, products are delivered in Rotterdam. Besides that, the brand ‘port of Rotterdam’ is important. Kloosterboer is most of the time part of clusters. They need certain facilities that are only available at certain places. For example: meat that enters the country needs to be approved at the border. On top of that, it is handy that trucks that arrive full can leave the port full with other load. This is all available at the port of Rotterdam. Besides that, in the port of Rotterdam are also knowledge clusters. The customs have a certain feeling for which goods need to be cleared quickly.

A reefer is expensive and the maximum time it is allowed to be off the terminal is for two days. In case a reefer will go further inland by barge, this will take too much time and the
risk that the reefer will not be back in time is too high. That is the reason why you don’t prefer to have a refrigerated distribution centre in the hinterland for maritime goods. There are also trading houses that want to have the distribution centre next to the trading house. This is based on a feeling. Those trading houses are based in Rotterdam and thus, the distribution centre is in Rotterdam. When a specific bond with the city of Rotterdam exists, the port of Rotterdam is a good location for a distribution centre. Also the Port Authorities can play an important role. Foreign companies want to see a reliable authority and a tour in the port with a good lunch absolutely helps to attract customers.

**Opinion about the role of the Port of Rotterdam in process of location selection according to Kloosterboer**
The function of Port of Rotterdam is to facilitate. They do it well. Companies in the port will attract customers. Port of Rotterdam promotes the port of Rotterdam very well, also abroad. Kloosterboer would rather buy the land on which the distribution centres are instead of hiring.

**Other comments**
Kloosterboer is not distributing to retail or final customers. The goods go to other companies that are in charge for the next processing step. It is B2B, not B2C. The distribution centres of Kloosterboer are always on a location that is logical for the next processing step of the goods.

**Reflection of the case of Kloosterboer with the propositions**
It is of interest to compare the case of Kloosterboer with the propositions. Hereafter, the propositions will be repeated and an analysis of those propositions will be given.

**Companies are in demand of a distribution centre because they are in need for capacity, they want to have expansion capability or there are changes in the supply chain.**
This is true for the distribution centre at the Maasvlakte area of Kloosterboer. The customer wanted to expand the export and therefore this demand was because of a change in the supply chain.

**When a company is aware of the demand of a distribution centre, they will start looking for different (places for) distribution centres on basis of intermediating companies.**
Kloosterboer doesn’t use intermediating companies, but in this case, Kloosterboer can be regarded as the intermediating company itself. So the proposition holds for the case of Kloosterboer. Their demands influences the distribution centre since they will only start building when two or three customers want to use the distribution centre and they don’t want to focus the distribution centre too much on one customer since it needs to be used by another customer after the contract period.
The considerations for the different (places for) distribution centres will be made on basis of the following criteria:

- Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour

The case of Kloosterboer confirms that a location for a distribution centre is always a consideration. Real estate value is very important. Besides that, Kloosterboer takes other considerations into account as well when selecting (a site for) a distribution centre. A distribution centre should not be too much focussed to one customer, because it needs to be used by another customer after the rental period. For Kloosterboer it is also of importance that they were able to combine the export services for their customers with import services. The distribution centre should also be on a place that is logical for the next step.

When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about the criteria.

In this case, the distribution centre had to be within a distance of 20 to 25 kilometres of the plant and a large area was required. The location at the Maasvlakte area fitted these limitations and therefore, this location was sufficient.
Neele-Vat
(Vat, 2015)

Information about Neele-VAT Logistics and their considerations in selecting a location for a distribution centre

General description of Neele-VAT Logistics
VAT Logistics started in 1975 by entrepreneur Ruud Vat. Recently VAT Logistics merged with Neele Logistics. Neele-VAT Logistics is a European oriented logistic service provider. The focus is on the following goods: ADR (dangerous goods), electronics, chemicals, fast moving consumer goods, bulk.

Relationship of Neele-VAT Logistics with port of Rotterdam
Neele-VAT has five distribution centres in the port of Rotterdam, namely one at the Maasvlakte area and four more inland. The distribution centres are partly hired from investors and partly owned.

Distribution centres of Neele-VAT Logistics
The following locations are originally of VAT Logistics:
15.000 pallet places and 600 m² surface for VAL at Amsterdam
50.000 pallet places and 1500 m² surface for VAL at the Maasvlakte area
25.000 pallet places and 1000 m² surface for VAL at Marco Polostraat, Rotterdam
400 m² surface for VAL at Zwijndrecht
15.000 pallet places at Botlek, Rotterdam

Former Neele logistics has the following locations:
Hoogvliet, Rotterdam
Botlek, Rotterdam
Brugge, Belgium

Customers of Neele-VAT Logistics
The customers of Neele-VAT Logistics are parties that want to have their goods shipped. The contracts with customers are different and vary between five days and five years. Neele-VAT finds customer at several places. They find them at exhibitions, through other contacts, etc.

Activities of Neele-VAT Logistics in favour of their customers
Neele-VAT organizes the transportation and distribution of the goods of their customers.

Description of the process of location choice of Neele-VAT Logistics
The criteria of Neele-VAT Logistics are the following:
- The heights of permits / land prices and costs for building (these are high in Rotterdam)
- Intermodal accessibility
- Position related to cargo flows

It is also of importance to be surrounded by other companies. Social monitoring is important, but also the mutual gathering of waste, security and public transport. And for example the rest warmth of chemical companies can be used to keep the distribution centre at a certain temperature. Also the presence of for example DHL is of importance.
Opinion of port of Rotterdam as a location for a distribution centre according to Neele-VAT Logistics

The location of Neele-VAT Logistics at the Maasvlakte area is for storage of dangerous goods. This is a location where this is allowed.

The unique selling points according to Neele-VAT Logistics are:

- It is a port industrial complex (companies that are present in the port, customs, AGF, chemicals)
- There is education on several levels (Scheepvaart en Transportcollege, Hogeschool Rotterdam, Erasmus University) that keeps the quality of the personnel high.
- The availability of personnel.

Opinion of other locations as a location for a distribution centre according to Neele-VAT Logistics

Residence plays a role at customers. When a company from Amsterdam finds a location for a distribution centre in Amsterdam which is satisfying, the company will not search for another location.

Opinion about the role of the Port of Rotterdam in process of location selection according to Neele-VAT Logistics

Neele-VAT Logistics would like to use the multi-trailer lane at the Maasvlakte area.

Other comments

None

Reflection of the case of Neele-VAT Logistics with the propositions

Companies are in demand of a distribution centre because they are in need for capacity, they want to have expansion capability or there are changes in the supply chain.

Customers of Neele-VAT Logistics are primarily concerned with transporting their goods to Europe, not with the organisation of transporting it.

When a company is aware of the demand of a distribution centre, they will start looking for different (places for) distribution centres on basis of intermediating companies.

Neele-VAT doesn’t use intermediating companies, as well as in the case of Kloosterboer. Neele-VAT can be seen as the intermediating company itself, so the proposition can be supported on basis of the case of Neele-VAT. Neele-VAT finds its customers in several
The considerations for the different (places for) distribution centres will be made on basis of the following criteria:

- Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour

Neele-VAT Logistics has several criteria when selecting (a site for) a distribution centre. From the criteria above, Neele-VAT has overlapping criteria. Regarding costs for land, operations and transportation they take into account heights of permits. Presence of other companies is also of importance since they like to be surrounded by other companies. They consider infrastructure as well since intermodal accessibility is one of their criteria. Neele-VAT Logistics thinks that residence plays a role. Companies will not search for another location when they found a satisfying location in their neighbourhood. Safety is also of importance, but the presence of other companies is of important because of safety reasons. Another consideration they take into account is the position related to cargo flows.

When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about the criteria

According to Neele-VAT, residence plays a role at customers. When a company from Amsterdam finds a location for a distribution centre in Amsterdam which is satisfying, the company will not search for another location.
**Crocs**  
(Teeninga, 2014)

**Information about Crocs and their considerations in selecting a location for a distribution centre**

**General description of Crocs**  
Crocs is a company that manufactures and distributes light-weight foam shoes.

**Relationship of Crocs with port of Rotterdam**  
The European distribution centre of Crocs is within the port of Rotterdam.

**Customers of Crocs**  
Customers of Crocs are consumers in the US, Europe and Asia. Of these three continents, only Europe is of interest for this research. The distribution centres for Europe are in Rotterdam and Moscow.

**Activities of Crocs in favour of their customers**  
Crocs manufactures shoes for customers. Customers can buy these shoes in the shops and online.

**Description of the process of location choice of Crocs**  
When Crocs begins with searching for a distribution centre, they select a broker that will start searching for them.  
When a distribution centre will be selected, Crocs looks at different factors. These are:

- Costs regarding flow of incoming goods
- Costs of the distribution centre itself
- Costs of labour in the concerned distribution centre
- Costs regarding flow of outgoing goods

Besides that, Crocs also takes softer factors into account like the availability of personnel, tax advantages in the country where the distribution centre is or will be. These factors need to be in balance. An example is that a network study has been executed and from this study it became apparent that the costs of labour in Germany are less expensive than in the Netherlands. But the tax advantages in the Netherlands are larger than the cost reduction that will be realised by moving to Germany. Besides that, the Netherlands are less sensitive for strokes and benefits for expats are larger in the Netherlands.

**Opinion of port of Rotterdam as a location for a distribution centre according to Crocs**  
A port is a bit of a strange location for a distribution centre, because the costs are quite high. By the time the distribution centre in the port of Rotterdam has been chosen, the economic situation was very different than the current economic situation. It was an economic boom and very little space was available. The space in Rotterdam was available and that was the reason why Crocs selected this distribution centre. Currently, Crocs is able to find a less expensive distribution centre, but throughout the time they invested in the infrastructure of the distribution centre. They currently have RF-chips etcetera. Besides that, costs for moving need to be taken into account by selecting another distribution centre. That will be approximately €500,000,-. And moving means a period of transition and that entails risks and a start-up period in the new distribution centre.
Until seven years ago, Crocs used eleven distribution centres through Europe. Finally, this has been consolidated in the distribution centre in the port of Rotterdam.

**Opinion about the role of the Port of Rotterdam in process of location selection according to Crocs**

PoR needs to give approval for the party that want to settle in the distribution centre.

**Other comments**

The modalities that Crocs uses for the distribution centre in Rotterdam are the following:

- 65%-70% of the incoming goods come by vessel from China and Vietnam
- 30% of the incoming goods come from Italy (there is a factory of Crocs) and by truck from Bosnia.
- 1% of the incoming goods come by airplane

The outgoing goods are transported by truck.

50% of the goods will be handled cross-dock at the distribution centre.

Crocs is willing to cooperate with PoR. They are willing to think about several things. For example: if PoR wants to improve the accessibility, they are willing to consider only using trucks off peak in exchange for subsidies.

**Reflection of the case of Crocs with the propositions**

*Companies are in demand of a distribution centre because they are in need for capacity, the want to have expansion capability or there are changes in the supply chain.*

This proposition holds for the case of Crocs. Crocs changed the supply chain by consolidating their distribution centres.

*When a company is aware of the demand of a distribution centre, they will start looking for different (places for) distribution centres on basis of intermediating companies.*

This proposition is supported by the case of Crocs. When Crocs search for a distribution centre, they select a broker that will start searching them.

**The considerations for the different (places for) distribution centres will be made on basis of the following criteria:**

- Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour

Criteria that have been mentioned by Crocs are the costs regarding the flow of incoming and outgoing goods and the costs of the distribution centre itself. Also the tax advantages in the country of consideration will be taken into account (this can be
regarded to be an investment condition) and the costs and availability of personnel is taken into account.

*When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about the criteria.*

For Crocs, the final decision depends on the investments made in the current location and the present value of it. Besides that, they also take into account the risks for moving. This means that they do not know everything about moving to another location and can only act based on what they know.
ProDelta
(van Dijk, 2014)

Information about ProDelta and their considerations in selecting a location for a distribution centre

General description of ProDelta
ProDelta is a family owned company which already exists for more than 40 years. It is a holding which consist of three different enterprises. Besides a logistics real estate enterprise, an enterprise in mobile cranes (called Hovago) and investment enterprise Riwal are under the umbrella of ProDelta. This report is only focussed on the logistics real estate enterprise. The enterprise in mobile cranes and the investment enterprise are not taken into consideration.
The portfolio of the real estate enterprise of ProDelta consists of 525,000m². They are mainly active in the port of Rotterdam, the province North-Brabant and the port of Antwerp. ProDelta lately purchased another 135,000m² and they are currently engaged in a location in Oss.

Relationship of ProDelta with port of Rotterdam
ProDelta owns a storage facility (71,000 m²) for commodities at the Maasvlakte area. Besides that, they own a distribution centre (55,000 m²) at Butaanweg for storage and distribution of dangerous goods and a distribution centre (5,500 m²) for consumer goods at the Waal- Eemhaven area.

Distribution centres of ProDelta
10,700 m² at Nieuwegein
23,096 m² at Ede
22,500 m² at Tiel
45,000 m² at Veenendaal
71,000 m² at the Maasvlakte area, Rotterdam
55,000 m² at Butaanweg, Rotterdam
30,300 m² at Ritthem
16,500 m² at Breda
90,000 m² at Spijkenisse
10,000 m² at Antwerpen
21,000 m² at Antwerpen
33,100 m² at Den Haag
33,600 m² at ‘s-Hertogenbosch
5,500 m² at Smirnoffweg, Rotterdam

Customers of ProDelta
The customers of ProDelta are logistic service providers and shippers. These customers use tender processes to find, amongst others, a distribution centre. There need to be taken an eye on these tender processes in the entire network to be informed about prospective customers. This goes in a large variety of ways. It can be the case that ProDelta will be approached by a broker or by the customer itself. Sometimes they are approached by the public authority. Jones Lang LaSalle, DTZ Zadelhoff and CBRE are all brokers with an international network. The Dutch Government and the organisation ‘Nederland Distributieland’ play a role. REWIN and BOM play a role in the acquisition of companies in the region.
**Activities of ProDelta in favour of their customers**

ProDelta develops and rents logistics real estate. So they realise logistics real estate and rent it for the long term. They also do the technical management. They have 200,000 m² available for storage of dangerous goods.

ProDelta has an environmental permit for dangerous goods. When a customer demands storage of dangerous goods, there can directly be considered whether the permit covers these goods and if so, the storage can take place from the next day onwards. When ProDelta wouldn’t have such a permit, it would take a year to get the permit.

The developments on the new location are related to consumer goods.

**Description of the process of location choice of ProDelta**

According to ProDelta, transport costs are important for the users of distribution centres. A criterion which is becoming more and more important is whether there is personnel available. Besides that, the height of the rental fee is important for the users of the distribution centres.

ProDelta starts developing distribution centres in some cases when there is no customer yet. They know that their customers (the logistic service provider or the shipper) are in a tender process, as already described earlier. The need to organize transport and personnel and there must be a building available. So ProDelta will be too late when they start building at the moment the customer needs an available building.

For ProDelta, it is of high importance that a location is, besides well attainable by truck, in the proximity of water, because they believe in the increasing use of inland waterway transportation.

**Opinion of port of Rotterdam as a location for a distribution centre according to ProDelta**

The Maasvlakte area is not a good location for a distribution centre. You need to keep Maasvlakte as container terminal or tankstorage. European distribution centres are increasingly located in the direction of the hinterland. Land on the Maasvlakte area is expensive; you pay half the price of it in Venlo for instance. Besides that, it is hard to find workforces at the Maasvlakte area, which is one of the criteria when selecting a site for a distribution centre, according to ProDelta.

ProDelta invests in the port of Rotterdam because they believe that there are always dynamics in the port. The distribution centres within the port of Rotterdam are port related and not large-scale.

**Opinion about the role of Port of Rotterdam in process of location selection according to ProDelta**

ProDelta stated that Port of Rotterdam determines what party can make use of the land. ProDelta is satisfied about the role of Port of Rotterdam.

**Other comments about ProDelta**

ProDelta thinks in terms of “Why is this a good location?” instead of “Will this investment return more than a bond?”

They put effort in maintaining the relationship with the customers.
Reflection of the case of ProDelta with the propositions

*Companies are in demand of a distribution centre because they are in need for capacity, they want to have expansion capability or there are changes in the supply chain.*

Forever 21 approached ProDelta to build a distribution centre. This was because of expansion of the activities (Dijkhuizen B., Logistiek.nl, 2015).

*When a company is aware of the demand of a distribution centre, they will start looking for different (places for) distribution centres on basis of intermediating companies.*

Since ProDelta is an intermediating company, this proposition is supported by the case of ProDelta. To be found by prospective customers, ProDelta needs to take an eye on tender processes and be informed by use of the network they are in. This is quite intangible. Sometimes they start building a distribution centre at a location which is attractive in their opinion.

*The considerations for the different (places for) distribution centres will be made on basis of the following criteria:*

- Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour

According to ProDelta, the user of the distribution centre looks at the costs for transportation as well as the height of the rental fee. Besides that, available personnel is becoming more and more important.

*When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about the criteria*

Noting can be said about this proposition based on the case of ProDelta.
**Dudok**  
(Vos, 2014)

**Information about Dudok and their considerations in selecting a location for a distribution centre**

**General description of Dudok**
Dudok primarily invests in real estate and has recently started with investing in logistics real estate. This report is only about their business in logistics real estate. Dudok owns logistics real estate at Dordrecht, Rotterdam, Moerdijk and Amsterdam.

**Relationship of Dudok with port of Rotterdam**
Dudok owns a distribution centre at the Maasvlakte area which was previously used by Reebok. Dudok is currently looking for a party that want to rent this distribution centre.

**Distribution centres of Dudok**
- 60.000 m² at the Maasvlakte area
- 50.000 m² + 23.000 m² at Moerdijk

**Customers of Dudok**
Customers of Dudok are logistic service providers and shippers. Customers can be found via a broker. Parties that are looking for a distribution centre commonly do this by use of a broker. In some cases, prospective customers consult Port of Rotterdam and Port of Rotterdam calls Dudok, but this happens rarely. Other ways to find prospective customers are via the Dutch Foreign Investment Agency or RIA. Prospective customers are also indirectly looking for distribution centre via tender processes. In that case, Dudok do not have contact with the shipper itself, but only with the logistic service provider(s) in the tender process.

**Activities of Dudok in favour of their customers**
Dudok develops or purchases and rents logistics real estate. So they buy land at a certain location and realise logistics real estate or they purchase already existing facilities. They rent these facilities for the long term.
Dudok stays in touch with their customers regularly, because it is too late to contact them only by the end of the rental period.
One person at Dudok is responsible for the technical management. This person coordinates technical issues. For fulfilment of this task, Van Wijnen will be consulted.

**Description of the process of location choice of Dudok**
According to Dudok, companies in the field of e-commerce want to be close to the consumer, even when it is only a small part of their activities.
Dudok found out that Groenewout investigated that the Maasvlakte area is a good location for companies in high-tec, medicines and fashion wholesale. This is the case because the inbound benefits of this location are larger than the outbound benefits of a location closer to the customer.
Clusters might be of interest to integrate the supply chain. When similar companies like Canon will settle close to each other, DHL will probably also locate there, because they will bundle packages.
The vision of Dudok is that they will invest in logistics real estate near terminals. They think that users of distribution centres want to use a distribution centre near a terminal. If a location near a terminal can be purchased, Dudok will always purchase it.

**Opinion of port of Rotterdam as a location for a distribution centre according to Dudok**
The Maasvlakte area is an interesting location for distribution centres according to Dudok. Because the increase in the amount of containers to be handled in the future by the realization of Maasvlakte II, the Maasvlakte area is will be a good distribution centre in the future. The Maasvlakte area is perfect for outbound logistics. Companies from the US select Rotterdam because of the brand ‘largest port of Europe’, but the European department of these companies might have influence and know the benefits of for example Venlo which is closer to the customer. According to Dudok, the connections by rail and barge are good and good personnel is available at the Maasvlakte area, although personnel have to travel over a long distance to reach the Maasvlakte area. A railconnection at the Maasvlakte area would increase the quality of the Maasvlakte area as location for a distribution centre. Besides that, they would like to use the multi-trailer lane at the Maasvlakte area.

**Opinion about the role of the Port of Rotterdam in process of location selection according to Dudok**
According to Dudok, Port of Rotterdam could be more active in arranging transport of personnel to the Maasvlakte area. Besides that, Port of Rotterdam is not active in pulling companies to the port of Rotterdam and connecting prospective customers with Dudok. There is a multi-trailer lane at the Maasvlakte area. Dudok would like to use this lane.

**Other comments**
Environmental requirements have been set for freight transportation at the Maasvlakte area. A lot of trucks are from Eastern Europe and they do not satisfy these requirements. Because of that, a lot of distribution centres at the Maasvlakte area cannot be served anymore by these trucks.
Logistics real estate is still in an infant stage at Dudok.
The building owned by Dudok that was previously in use by Reebok is empty for two years now.

**Reflection of the case of Dudok with the propositions**

*Companies are in demand of a distribution centre because they are in need for capacity, they want to have expansion capability or there are changes in the supply chain.*
This proposition can not be supported by the case of Dudok.

*When a company is aware of the demand of a distribution centre, they will start looking for different (places for) distribution centres on basis of intermediating companies.*
This is the case for clients of Dudok, since Dudok is an intermediating company. Dudok finds its customers in a variety of ways that are very intangible. The vision of Dudok is that they invest in distribution centres near terminals.
The considerations for the different (places for) distribution centres will be made on basis of the following criteria:

- Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour

Dudok considers transport costs to be important since they compare locations on the sum of inbound and outbound costs. Also presence of other companies is of importance to be able to integrate the supply chains if different companies and to bundle packages.

When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about the criteria.

This proposition cannot be supported by the case of Dudok Vastgoed.
**Borghese Logistics**
(Broekhoven, 2014)

**Information about Borghese Logistics and their considerations in selecting a location for a distribution centre**

**General description of Borghese Logistics**
Borghese Real Estate is part of a family owned group of companies that already exists for 16 years. The group consists of a construction company (called Pleijsier Bouw) and three development companies; Borghese Real Estate, Borghese Logistics and project developer COD.

Borghese Logistics is busy with the development of real estate. Borghese Logistics originated in 2013. Borghese has always been engaged in logistics real estate, but this is a niche market and it requires more attention, so that resulted in the creation of Borghese Logistics. Borghese Logistics is mainly active in the logistic hotspots such as Amsterdam and Rotterdam but also in the rest of the Netherlands. Borghese Logistics developed approximately 370.000m² in total and the logistics real estate of Borghese Logistics is for the storage and distribution of consumer goods.

**Relationship of Borghese Logistics with port of Rotterdam**
Borghese Logistics developed a large distribution centre (70.000m²) at the Maasvlakte area.

**Distribution centres of Borghese**
- 70.000 m² at the Maasvlakte area Rotterdam
- 50.000 m² at Amsterdam
- 20.000 m² at Amsterdam
- 18.800 m² + 12.300 m² at Raamsdonksveer
- 56.300 m² at Raamsdonksveer
- 15.000 m² at Beuningen
- 56.300 m² at Tiel
- 17.000 m² at Beuningen
- 7.600 m² at Drachten
- 10.700 m² at Nieuwegein

**Customers of Borghese Logistics**
Customers of Borghese Logistics are shippers as well as logistic service providers. Prospective customers can become customers in different ways. The broker knows something sometimes. A customer from the past can have a request. Tender processes take place. Sometimes Borghese Logistics hears something from consultancy companies. The information about prospective customers comes from the network.

**Activities of Borghese Logistics in favour of their customers**
Borghese Logistics realizes housing solutions for their customers. The acquisition is different for different customers, but the development is the same process. When a distribution centre has been developed, there will be searched for an investor. It is no problem for Borghese Logistics to own property for a while. Logistics real estate is attractive for pension funds and sometimes it is the case that the user of the distribution centre purchases the distribution centre.
Description of the process of location choice of Borghese Logistics

According to Borghese Logistics, the decisive factor is how companies are accessible. For companies, the location of a distribution centre is most of the time the sum of the following factors:

- Rental price
- Accessibility and relating costs of transportation
- Availability of personnel

But the result of this sum differs. There is apparently a political factor as well. It is of importance who makes the decision. If the CEO of the company comes from a certain background, he has a bias in favour of a certain site. That is very human and totally underexposed when it comes to select a site for a distribution centre.

For Borghese Logistics, other criteria will be taken into account. Is the party that has demand for logistics real estate financial stable? Is the property the prospective customer wants also suitable for a following customer. The property needs to have at least 1 dock per 850 – 1000 m² floor area, a minimum floor load capacity of 5000 kg/m² and a stacking height of 12,20m. Besides that, it needs to be secured (sprinkler) and insulated such that it is FM Global compliant.

In the past, developments took place even when there was not a user for a distribution centre yet. Currently, it will not be done for entire distribution centres, but it can be for example that a customer wants 13.000m². Borghese Logistics can decide to develop 30.000m² and find a user for the remaining part later.

Clusters can hardly be found in logistics, although some parties want to think in campus models. A contract for the use of a distribution centre is often for three years. In the adjacent property, the contract can be for five years. There is not that much cross fertilization. Sometimes synergy benefits can be found, for example when carriers want to be based near a distribution centre in order to save the trip from the home base to the distribution centre.

Opinion of port of Rotterdam as a location for a distribution centre according to Borghese Logistics

At the Maasvlakte area, Borghese Logistics owns a location that is quite close to the terminal, but the customer that uses that distribution centre always has to handle the container. On the contrary, the land price is relatively low compared to other parts of the country.

It is quite hard to get personnel at the Maasvlakte area.

‘Port of Rotterdam’ is a brand. That shouldn’t be underestimated!

Opinion of other locations as a location for a distribution centre according to Borghese Logistics

For the area of Schiphol holds that you only benefits when you are located directly on the runway. Atlaspark in Amsterdam has a great accessibility from the A5, it is only 15 minutes from Schiphol and the land price is much lower than at the area of Schiphol. In addition to that, there is an inland terminal and a rail connection.

The distribution centre of one of the customers of Borghese Logistics which is originally from Amsterdam is located in Amsterdam. It could have been in Rotterdam, but the company is from Amsterdam, so the distribution centre is in Amsterdam.

A place where personnel can be found more easily is Nieuwegein. Also the areas near Utrecht are easy to reach for personnel.
Venlo is less expensive than Rotterdam. Antwerp is less reachable than Rotterdam. In Belgium the availability of personnel and the power of trade unions is different.

**Opinion about the role of the Port of Rotterdam in process of location selection according to Borghese Logistics**

Borghese Logistics is satisfied about the role of Port of Rotterdam. The focus is on the customer and it is clear that it is not a department of the municipality. Port of Rotterdam knows the interests of different parties.

**Other comments**

Borghese Logistics selected one of their locations because they had good knowledge about that area. On the question why they selected this area the answer was “you cannot know every area”.

**Reflection of the case of Borghese Logistics with the propositions**

**Companies are in demand of a distribution centre because they are in need for capacity, they want to have expansion capability or there are changes in the supply chain.**

This is the case for clients of Borghese. Their task is to realize housing solutions for customers.

**When a company is aware of the demand of a distribution centre, they will start looking for different (places for) distribution centres on basis of intermediating companies.**

This is the case for clients of Borghese, since Borghese is an intermediating company. Borghese Logistics finds its customers via their network. The broker knows something sometimes. Customers from the past have new requests. Tender processes take place. Information can also come from consultancy companies.

For Borghese logistics, it is important that the party that has demand for a distribution centre is financially stable. Besides that, the property needs to be suitable for a following customer. Borghese Logistics only invests in areas they have knowledge about. Other areas might be good, but if they don’t have enough knowledge about it, they will not invest in it.

**The considerations for the different (places for) distribution centres will be made on basis of the following criteria:**

- Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour

According to Borghese Logistics, the location of a distribution centre is most of the time the sum of the following factors:

The rental price of the distribution centre and the costs of transportation, the accessibility and the availability of personnel.
For Borghese, also the financial stability of the customer is taken into account and the property needs to be suitable for a following customer.

*When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about the criteria*

Borghese Logistics selected one of their locations because they had good knowledge about that area. On the question why they selected this area the answer was “you cannot know every area”. This implies that they base the decision on what they know about the area.
BOM
(Lankveld, 2015)

Information about BOM and their vision on selecting a location for a distribution centre

**General description of BOM**

BOM is the Regional Development Agency of the province Noord-Brabant. BOM has four main areas of activity:

1. Attraction of Foreign Investment
2. Business Development (stimulation of co-operation of innovative SME’s aimed to creation and development of new business, products and services)
3. BOM Venture Capital: source of risk capital for growing innovative SME’s in the top sectors
4. BOM Business Parks (intermediate process management with regard to restructuring and development of business parks)

BOM is financed by the Province of Brabant (mainly) and the Ministry of Economic Affairs (minor part)

**Relationship of BOM with PoR**

No formal relationships exist between BOM and PoR. However, BOM services many logistic players in Brabant that do have direct relationships with PoR.

**Customers of BOM**

Businesses in Brabant are customers of BOM.

**Activities of BOM in favour of their customers**

BOM attracts companies to establish in the province Noord-Brabant. Being in contact with companies to attract is a process of the long haul. It sometimes takes years.

**Description of the process of location choice according to BOM**

Large foreign companies with already established markets in Europe, mostly establish a physical own location (e.g. sales office, HQ, DC). Foreign companies entering the European market for the first time, often in the European market place via a logistics services provider. A solution via a logistics service provider is flexible, low cost and low risk. When business grows, these companies often decide to insource the operation in order to have better control.

A distribution centre should fit in the supply chain of the company. It makes a large difference if the operation delivers direct to the end customer or to national storage operations. A company looks for areas to locate based on several criteria, like size and position of the market, quality of transport connections and services, costs for real estate, availability, quality and costs for labour forces, taxation and fiscal topics. Then they identify the available (spots for) distribution centres within the area and select the one that fit their needs.

A distribution centre is a minor part of the costs of the supply chain. It can be between 10% or 20% of the total supply chain costs, hardly ever more than 50%. Transport costs are way more important.

One example of a company that recently made a decision for a location for a distribution centre is Tesla. When Tesla was orientating for a location for a distribution centre, they considered Rotterdam, Amsterdam and Brabant. One of the parties they were in contact...
with was a logistic service provider with terminals in Amsterdam and Rotterdam. That is the reason why these locations were considered. But Tesla wanted to transport their goods in containers instead of transporting complete cars by RoRo vessel and that was the reason why they could also take the hinterland into account. The real estate in Brabant is less expensive, there are more workforces and these workforces are not as expensive as in Rotterdam or Amsterdam. By selecting a location in Brabant, it was of interest to have a quite large distribution centre available for hiring, this was available in Tilburg.

**Opinion of port of Rotterdam as a location for a distribution centre according to BOM**
A distribution centre should fit in the supply chain of the company.

**Opinion of other locations as a location for a distribution centre according to BOM**
A distribution centre should fit the supply chain of the company. Logistics is a derivative of markets, regulations, local factors, etc. The location of a distribution centre depends on the sector, the business and the logistic model. The logistic service providers push to their own capacity and locations. For every company that is selecting a location for a distribution centre a specific design can be made.

**Opinion about the role of PoR in the process of location selection according to BOM**
PoR should prove that they understand the needs of the companies. The port of Rotterdam is only a link in the entire global chain. For some areas, container connections are better from Antwerp. Customs is also something that is taken into account by selecting a port. As a node, PoR should make sure to distinguish the port of Rotterdam from other ports. Container flows towards Europe are slowly shifting across Europe. Container flows increasingly go direct to ports in Southern, Eastern and South-Eastern Europe. PoR should take a position in managing European flows for their customers even if these flows are not physically serviced by PoR. Therefore it would be interesting for PoR to develop partnerships with ports in other regions of Europe like Constanza, Koper, Barcelona, etc.
The cargo flows should be managed, a control function is becoming more and more important. The link should be made as efficient as possible and PoR should be decisive in guiding the logistic services.

**Reflection of the case of BOM with the propositions**

*Companies are in demand of a distribution centre because they are in need for capacity, they want to have expansion capability or there are changes in the supply chain.*
This proposition holds by the case of BOM. According to BOM, a distribution centre should fit the supply chain.

*When a company is aware of the demand of a distribution centre, they will start looking for different (places for) distribution centres on basis of intermediating companies.*
This is indeed the case for companies from abroad. When they start selling their products in Europe, they cooperate with a logistics service provider. Logistic service providers push to their own capacity.
What can be added about the case of Tesla is that the selection for Tilburg has been done in cooperation with BOM, NFIA, the municipality of Tilburg, CBRE Group (property consultant) and DTZ Zadelhoff (representative of the owner of the distribution centre) (de Weerd, 2012)
The considerations for the different (places for) distribution centres will be made on basis of the following criteria:

- Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour

According to BOM, when locations for distribution centres fit in the supply chain, companies compare locations on the costs of real estate and the availability and costs for labour forces.

What can be added about the case of Tesla, the close proximity of automotive centres in Helmond and Eindhoven have been taken into account (Dijkhuizen B., Logistiek.nl, 2013).

When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about the criteria.

This proposition holds for BOM. The final decision should fit the supply chain.
NDL
(van den Bosch, 2015)

Information about NDL and their vision on selecting a location for a distribution centre

General description of NDL
NDL is a private non-profit association which is financed by the members (all kind of companies and organisations who are directly and indirectly active in logistics over road, water, rail, air and pipelines) and the ministry of infrastructure and environment. The focus is on strategic acquisition.
NDL has three goals:
• Attracting investments
• Attracting cargo flows
• Exporting logistical knowledge

Relationship of NDL with PoR
There is collaboration with PoR. PoR and NDL are both members of the overseas promotion board.

Customers of NDL
The customers of NDL are the ministry of infrastructure and environment and the members.

Activities of NDL in favour of their customers
The focus of NDL is to find the best logistic solutions for companies.

Description of the process of location choice according to NDL
In a supply chain, the cash-flow is of importance, business minded customs and especially for Americans the liability. Of course they also look at the location, availability of personnel, land and infrastructure.
American and Asian parties who are looking for a place for a distribution centre will have a look at Europe as one entity instead of one land or area within Europe. They pay attention to how they can serve their customers, so they want to have the stock close to the market. Companies mainly look whether goods can be transported tax free and how the customs clearance is organized.
One can observe that companies that start selling their products in Europe start with an EDC and when they grow, they will start working with RDC’s (satellite structure).

Opinion of port of Rotterdam as a location for a distribution centre according to NDL
The Maasvlakte area doesn’t have human inhabitants. This is a benefit for executing certain operations for example chemical operations. A lot of space is available, so space consuming activities can take place at the Maasvlakte area. Accessibility by inland vessel and rail is good.
Companies that could be located at the Maasvlakte area should transport full container loads outbound.
Maybe a combination between production and logistics might be a good idea, for example refinement of cacao.

Opinion of other locations as a location for a distribution centre according to NDL
As long as the business case for the shipper is good, the location is good.
Opinion about the role of PoR in the process of location selection according to NDL

PoR has been working on its own for a very long time. That was the image they had at other parties. The parties within the Netherlands should operate as one front for foreign companies. In the Netherlands, a lot of parties are very narrow minded. We think in areas. This creates a bit of inappropriate competition. An American looks at Europe and will have no idea about all those different areas in the first instance, but every country within Europe has its own USP’s and companies don’t have an idea about the national legislation, product registration, warranty, etc.

The cooperation with the hinterland should be increased.

Reflection of the case of NDL with the propositions

Companies are in demand of a distribution centre because they are in need for capacity, they want to have expansion capability or there are changes in the supply chain.

NDL helps companies to find logistic solutions, this means that changes in the supply chain can be an issue.

When a company is aware of the demand of a distribution centre, they will start looking for different (places for) distribution centres on basis of intermediating companies.

This proposition can be supported by the case of NDL. Companies from abroad look at Europe as one entity. They need intermediating companies.

The considerations for the different (places for) distribution centres will be made on basis of the following criteria:

- Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour

As long as the business case for the shipper is good, the location is good. For companies, the cash-flow is of importance, a business minded customs and liability issues. They also look at infrastructure and the availability of personnel.

When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about the criteria.

According to NDL, the business case needs to be good. This implies that if a sufficient option has been found, this will be selected.
BTT
(Maessen, 2015)

Information about BTT and their vision on selecting a location for a distribution centre

General description of BTT
BTT is the inland terminal in Tilburg. From this terminal, containers can be transported from the hinterland to the port of Rotterdam and the other way around. Several companies are around this terminal, like Nokia, Tesla, Samsung, Sony, Dell and Fuji.

Relationship of BTT with PoR
There is a good informal relationship between BTT and Port of Rotterdam. BTT picks up containers at cargadoors in the port of Rotterdam by rail, barge and truck.

Customers of BTT
The customers of BTT are shippers.

Activities of BTT in favour of their customers
BTT handles containers for their customers.

Description of the process of location choice according to BTT
In the description of the process of location choice, the land costs are of importance. At a location for a distribution centre, infrastructure is of importance. Besides that, the availability of personnel and the costs for personnel are important. The accessibility is also of importance. Companies consider the synergy benefits on the long term. The focus is on bundling the cargo flows of different shippers. All shippers have mainly the same container restrictions with the same importance, value, regulation, communication and duration requests.

Opinion of port of Rotterdam as a location for a distribution centre according to BTT
In first instance, BTT can not mention a particular reason to select the port of Rotterdam as a location for a distribution centre. Maybe it can be a good location to receive and consolidate goods from factories over the world and distribute the consolidated products over the world.

Opinion of other Brabant compared to the port of Rotterdam as a location for a distribution centre according to BTT
Personnel and costs for personnel is an important factor for companies who are selecting a site for their distribution centre. This factor is very different in Brabant then in the port of Rotterdam. This comes from the history. The port of Rotterdam has always been dependent of personnel. The people have always been working very hard in the port and still do that. Because of the dependence of personnel, this caused that personnel got more power. The culture of the personnel is different in Brabant. In Brabant, the personnel is better to manage. The accessibility in Brabant is better than in the port of Rotterdam. Moving a container for 20 kilometres in Rotterdam takes more time than moving a container for 20 kilometres in Brabant. Brabant is a central location and the throughput times are shorter.
Handling, transport and keeping containers in stock is also less expensive in Brabant as in the port of Rotterdam. To give an idea about the expensiveness of logistics: if you transport your containers by train from East Europe to the Netherlands, it is more expensive when you need to relocate within the port of Rotterdam than to handle in between via Brabant and transport directly from there to the final destination.

**Opinion about the role of PoR in the process of location selection according to BTT**
Attracting companies is a lot of lobbying from local business owners in relation with central or regional government.

**Reflection of the case of BTT with the propositions**

*Companies are in demand of a distribution centre because they are in need for capacity, they want to have expansion capability or there are changes in the supply chain.*
Nothing can be said about this.

*When a company is aware of the demand of a distribution centre, they will start looking for different (places for) distribution centres on basis of intermediating companies.*
According to BTT, looking for different (places for) distribution centres is a lot of lobbying.

*The considerations for the different (places for) distribution centres will be made on basis of the following criteria:*
- Costs for land, operation and transportation
- Presence of other companies
- Infrastructure and geo location
- Distance to origin of the company
- Availability of land and possibility to expand
- Safety
- Government and investment conditions
- Economy and market size
- Availability, quality and costs of labour

The land costs are of importance, as well as infrastructure. The availability and costs for personnel are of importance. Companies consider the synergy benefits on the long term. The focus is on bundling the cargo flows.

*When the considerations have been finished, the final decision needs to be sufficient and will be made based on what is known about the criteria.*
According to BTT, attracting companies is a lot of lobbying. This implies that the prospective customer continuously needs to be informed about the added value for him on a certain location.
Appendix 3: Actor analysis

All actors who are involved in site selection can be affected by solutions or have means that are essential for solving the problem. Therefore, it is of great importance to have insight into the different actors and the networks of those actors. An actor analysis will be done. The steps that will be executed are

- Mapping formal relations
- Making problem formulations of actors
- Analyze interdependencies

Mapping formal relations

The formal relations between actors involved will be represented below. By the map with formal relations, the context of the situation can be better understood and also some information about the resource dependencies between the actors in the network can be revealed. The formal chart can be found on the next page and will be explained below.

On national level, the NFIA, NDL are of importance. The NFIA is an operational unit of the Dutch Ministry of Economic Affairs. Throughout the years it has supported thousands of companies from all over the world to successfully establish their business in the Netherlands. (http://www.nfia.nl/About_NFIA.html). While the NFIA is focussing on all kind of activities (sales, research & development, etc.) they cooperate with NDL who focusses only on the logistics service. Within The Netherlands, NDL is also a knowledge platform (http://www.ndl.nl/wat-doet-ndl-voor-u/wat-doet-ndl-voor-u/?lang=nl).

On provincial and regional/municipal level, there are parties with similar tasks like BOM, LIOF, REWIN and Rotterdam Partners.

The relationship between PoR and the owners of distribution centres within the port of Rotterdam is that the owners make use of the land within the port and PoR wants to attract goods by the distribution centres. The owners of distribution centres hire the distribution centres to shippers and logistic service providers. Logistic service providers can be owners of distribution centres themselves, but shippers are rarely owners of distribution centres themselves. A real estate company can be involved as an intermediating company between the owners of distribution centres and shippers and/or logistic service providers. Sometimes two real estate companies are involved, since owners of the distribution centres use them as a representative and the users (logistic service providers as well as shippers) use them as advisor. Owners and users don't have to make use of a service of a real estate company in case they have the knowledge or means themselves.

Transportation companies (in truck transportation, barge transportation, rail transportation) transport goods on behalf of the shippers or logistic service providers. In case shippers don't manage the logistics themselves, they make use of the services of a logistics service provider. Shippers sometimes consult consultancy companies. Logistic service providers and shippers make use of workforces in their distribution centres.
### Making problem formulations of actors

<table>
<thead>
<tr>
<th>Actors</th>
<th>Interests</th>
<th>Desired situation/objectives</th>
<th>Existing or expected situation and gap</th>
<th>Causes</th>
<th>Possible solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>PoR</td>
<td>Attract cargo flows and create a climate that is attractive to settle for enterprises.</td>
<td>Having the space for distribution centres filled in order to attract cargo flows.</td>
<td>Some space is still available for distribution centres and PoR wants to know what they can do in order to fill that space.</td>
<td>Lack in knowledge about demands of companies interested in the port.</td>
<td>Get information about how to be currently attractive.</td>
</tr>
<tr>
<td>Owners of distribution centres</td>
<td>Investing money in order to make a profit.</td>
<td>Having all distribution centres in use and have insight in where to invest.</td>
<td>Complete information about the demand and other offers is not present.</td>
<td>Lack of information about demand for distribution centres.</td>
<td>Get information about the needs of the users of distribution centres and the options they have.</td>
</tr>
<tr>
<td>Users of distribution centres</td>
<td>Using a distribution centre that fits the supply chain.</td>
<td>Having distribution centres in use that fits the supply chain.</td>
<td>No complete information about possibilities.</td>
<td>Lack of information about supply for distribution centres.</td>
<td>Get information of the entire supply of distribution centres that might fit supply chains.</td>
</tr>
<tr>
<td>Real estate companies</td>
<td>Coupling supply and demand for logistics real estate.</td>
<td>Having information about available distribution centres and actual demand for it.</td>
<td>No complete information about supply and demand.</td>
<td>Lack of information about supply and demand for distribution centres.</td>
<td>Get information about all demand and all supply for distribution centres.</td>
</tr>
<tr>
<td>Actors</td>
<td>Interests</td>
<td>Desired situation/objectives</td>
<td>Existing or expected situation and gap</td>
<td>Causes</td>
<td>Possible solutions</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>National acquisition parties</td>
<td>Acquiring companies to settle in the Netherlands.</td>
<td>Having good relations with international companies to become informed about their settling plans.</td>
<td>Complete information about which international companies wants to settle abroad is not available.</td>
<td>Intransparancy due to company information that is not shared.</td>
<td>Having better relationships with more international companies.</td>
</tr>
<tr>
<td>Provinicial acquisition parties</td>
<td>Acquiring companies to settle in the province.</td>
<td>Having good relations with international companies to become informed about their settling plans.</td>
<td>Complete information about which international companies wants to settle abroad is not available.</td>
<td>Intransparancy due to company information that is not shared.</td>
<td>Having better relationships with more international companies.</td>
</tr>
<tr>
<td>Regional and municipal parties</td>
<td>Acquiring companies to settle in the municipality.</td>
<td>Having good relations with (inter)national companies to become informed about their settling plans.</td>
<td>Complete information about which companies wants to settle is not available.</td>
<td>Intransparancy due to company information that is not shared.</td>
<td>Having better relationships with more companies.</td>
</tr>
<tr>
<td>Inland terminals</td>
<td>Handle containers in the most efficient way.</td>
<td>Handling all containers for which it is possible to go to the hinterland.</td>
<td>Some containers are still transported by truck.</td>
<td>Supply chains are not well established.</td>
<td>Having a supporting role in establishing supply chains.</td>
</tr>
<tr>
<td>Transportation companies</td>
<td>Transporting goods according to the needs of the shipper.</td>
<td>Make full use of the capacity of the trucks/barges/trains.</td>
<td>The capacity of all trucks/barges/trains is not fully used.</td>
<td>Lack of information in the demand and supply for information.</td>
<td>Get information on what goods needs to be transported and when.</td>
</tr>
<tr>
<td>Actors</td>
<td>Interests</td>
<td>Desired situation/objectives</td>
<td>Existing or expected situation and gap</td>
<td>Causes</td>
<td>Possible solutions</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Employees of distribution centres</td>
<td>Perform work under satisfying conditions of employment.</td>
<td>A workplace that is good to reach.</td>
<td>The travel time to distribution centres is too long.</td>
<td>Distribution centres are not easy to reach.</td>
<td>Better connections for employees.</td>
</tr>
<tr>
<td>Consultancy companies</td>
<td>Providing services to improve the performance of the customer.</td>
<td>To have a situation in which different parties are considering the entire supply chain of the customer instead of looking from their own point of view.</td>
<td>The entire system is not always the focus.</td>
<td>Lack of understanding.</td>
<td>Change the mindset</td>
</tr>
</tbody>
</table>
### Analyze interdependencies

<table>
<thead>
<tr>
<th>Actor</th>
<th>Important resources</th>
<th>Replaceable</th>
<th>Dependency – limited, average, high</th>
<th>Critical actor?</th>
</tr>
</thead>
<tbody>
<tr>
<td>PoR</td>
<td>Governance of the land in the port</td>
<td>No</td>
<td>High</td>
<td>Yes</td>
</tr>
<tr>
<td>Owners of distribution centres</td>
<td>Funds to realise distribution centres</td>
<td>No</td>
<td>High</td>
<td>Yes</td>
</tr>
<tr>
<td>Users of distribution centres</td>
<td>Goods to store into distribution centres</td>
<td>No</td>
<td>High</td>
<td>Yes</td>
</tr>
<tr>
<td>Real estate companies</td>
<td></td>
<td>Yes</td>
<td>Limited</td>
<td>No</td>
</tr>
<tr>
<td>National acquisition parties</td>
<td>Contacts, information</td>
<td>No</td>
<td>Average</td>
<td>Yes, without them, it is hard to get contacts</td>
</tr>
<tr>
<td>Provincial acquisition parties</td>
<td>Contacts, information</td>
<td>No</td>
<td>Average</td>
<td>Yes, without them, it is hard to get contacts</td>
</tr>
<tr>
<td>Regional and municipal parties</td>
<td>Contacts, information</td>
<td>No</td>
<td>Average</td>
<td>Yes, without them, it is hard to get contacts</td>
</tr>
<tr>
<td>Inland terminals</td>
<td>Capacity to handle containers</td>
<td>No</td>
<td>High</td>
<td>Yes</td>
</tr>
<tr>
<td>Transportation companies</td>
<td>Ability to transport goods</td>
<td>No</td>
<td>High</td>
<td>Yes</td>
</tr>
<tr>
<td>Employees of distribution centres</td>
<td>Workforces</td>
<td>No</td>
<td>Average</td>
<td>Yes</td>
</tr>
<tr>
<td>Consultancy companies</td>
<td>Information</td>
<td>No</td>
<td>Average</td>
<td>No</td>
</tr>
</tbody>
</table>