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Master Thesis

*Network Capabilities in Project-Based  
Organizations:  
A Case Study of Avantor AS*

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### **Abstract**

The objectives of this thesis are to highlight the important elements and factors for creating and sustaining network capabilities in project-based organizations. A network capability is a firm's ability to handle the relationships they are embedded in. The purpose is to provide new insight to the existing theory in an attempt to develop theory on network capabilities within the established literature on the topic. Firm's increased level on engaging in different inter-organizational networks to handle project complexity has encouraged this study. Organizations' strategizing to create and sustain network capabilities may serve as a core competence for the firm to achieve project success. This thesis designed a single case study on the firm Avantor AS undertaking multiple projects within city development at the Nydalen area in Oslo and is used to collect the data from the empirical world. Moreover, the re-location of BI Norwegian Business School to the Nydalen area will be used as an example to illustrate Avantor AS's main activities when undertaking a project in a network setting. Built on qualitative research, mainly semi-structured interviews of knowledgeable individuals from both Avantor AS and BI Norwegian Business School, this thesis aims to raise issues on the creation and sustainability of network capabilities that have not been captured by previous studies.

A summarized theoretical framework was used as a base to guide this thesis and illustrated that network capabilities are developed in projects through a process involving three stages: Establish relationships, maintain relationships and learn from relationships. The base of capabilities already maintained at the organizational level feed these stages, and the outcome of the process is the creation of network capabilities. Network capabilities further feed back to both the project level and the organizational level for further improvement, making it an iterative process. This thesis has found that the visioning ability, reputation building, innovation and flexibility used in project-based organizations all impacted a firm's ability to create and sustain network capabilities. In line with this, confidence in network seemed to be the most edge able when selecting partners, increasing the chances of innovation including new partners to the network. Sustaining network capabilities is derived from the dynamic capabilities. Hence, the ability to adjust according to requirements for a complex product and making the new skills acquired useful in different relations on the next project.

## **1. Introduction**

Firms are increasingly engaging in different inter-organizational networks, resulting in both opportunities and constraints for the organization (Brass et al. 2004). A network capability is defined as “a firm’s ability to develop and utilize inter-organizational relationships”, and is argued to be one of the core competences of a firm in creating competitive advantage (Walter et al. 2006). However, scholars argue that there is a gap in the research concerning the creation and sustainability of such capabilities (Äyväri and Möller 2008). Therefore, exploring firms working to create products through inter-organizational activities are highly relevant in order to recognize the development process of network capabilities. Inter-organizational arrangements occur frequently in the setting of complex projects that are handled by project-based organizations (PBOs) (Hobday 2000). In addition to networks and inter-organizational arrangements, these projects are temporary, which accentuates the need to create and sustain network capabilities, making this an interesting setting to study the phenomenon (Dubois and Gadde 2002a; Pitsi et al. 2003).

In this thesis, we have performed a case study of the Norwegian property development company Avantor AS (hereby Avantor), undertaking multiple projects in Nydalen, Oslo. The purpose of the study was to further develop the theory concerning network capabilities. Moreover, a framework, summarizing previous research on the topic, has been used as a base for illustrating the creation and sustainability of network capabilities. Our analysis will be used to match the empirical world with the summarized theory to gain new insights on the topic and use the findings to contribute to theory development.

### **1.1 Background**

Complex projects, construction and infrastructure projects themselves are difficult to manage (Scott et al. 2011). Moreover, inter-organizational collaborations are often necessary in order to complete complex projects (Pitsi et al. 2003). A complex project is a typical network setting, as companies performing such projects are dependent on their networks and inter-organizational relations to complete their projects. As companies operate to a larger degree in networks, the need for network capabilities have emerged. This further creates the importance to understand how to strategize and manage in networks and how to create and

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sustain network capabilities. Considering the increased level of complex projects in the world, such as the Heathrow Terminal 5 in London (Davies et al. 2009), necessitates the reasons for assessing how firms are able to deliver a successful project. Other property and construction projects may be linked to urban developments that require planning on use of the environment, public welfare, infrastructure, transportation, communications and distribution of networks. Companies that are responsible for planning complex projects are highly dependent on their competence and skills within research, analysis, strategic thinking and management (Davies and Brady 2000). However, such projects may bring great difficulties due to their complexity on project implementation, integration and processes (van Marrewijk et al. 2008). Davies and Brady (2000) argue that suppliers of complex projects create new organizational capabilities of complex project systems that are essential to execute projects in a more efficient and effective manner by expanding into new business lines. However, Davies and Mackenzie (2014) point out that there is little or no focus on issues regarding the level of organizational and managerial capabilities required in a complex project.

## **1.2 Problem Statement**

Combining the gap concerning creation and sustainability of network capabilities with the issues of organizational and managerial capabilities in complex projects gave the basis for the research question, formulated as follows:

*“How do project-based organizations create and sustain network capabilities?”*

By this research question, we evaluated the process of creating network capabilities, and also assessed how firms sustain these types of capabilities. The research will be based on previous literature focusing on network theory, strategizing in networks, complex projects and network capabilities where the latter is related to the theoretical foundations of organizational-, (Chandler 1990) dynamic- (Teece et al. 1997) and project- capabilities (Davies and Brady 2000). Along with the literature, the research question will be answered by a qualitative study of the PBO, Avantor, undertaking complex projects.

### **1.3 Empirical Setting**

A case study of the company Avantor was used as a tool to gather data to illustrate findings and answer the research question of this thesis. Avantor was established in 1971, under the name Tor Andenæs AS. The objective was to do entrepreneurial work; develop and invest in property (Avantor 2016a). The company became a property company in the middle of the 70s and changed name to Avantor AS in 1990, after they were publicly listed in 1985. In 1994 the company merged with Gjelsten & Røkke Eiendom AS, and established their headquarter in Nydalen. Through this merger, Avantor gained control of a big area in Nydalen. Since this year, the development of Nydalen has been the main project of Avantor, and the company function as the main actor in this area. Today, Avantor is owned by the financially strong Rasmussengruppen in Kristiansand.

The business idea of Avantor is to be the most innovative and professional property development company. The company aims to add value to the industry through acquisition, development, management and sale of property, thus Avantor's vision is to be the "leading city developer". The properties of Avantor are mainly located in Nydalen, however the company also has some projects in different parts of Oslo, Asker, Kristiansand and Tønsberg. In this thesis, the focus area will be the properties and projects located in the Nydalen area.

The main activities of Avantor compromise two main areas: Property development and facility management. Avantor Property is the wholly owned subsidiary of Avantor, which is responsible for the operations and management of the commercial buildings (Avantor 2016b). Avantor owns the majority of the commercial buildings they have built, and function as the landlord for most of the companies located in Nydalen. This involves the overall responsibility for operations and maintenance of the buildings. Currently the company has approximately 330,000m<sup>2</sup> under the management of Avantor. This includes schools, hotels, offices and more. Nydalen Energi AS and Avantor Parking AS are also under this subsidiary, contributing to the environment in Nydalen. In addition, Avantor does the maintenance of the whole district centre of Nydalen, which is unique in the Nordic context. Avantor sold in 2014 for approximately 380 million NOK, where 320 million NOK was rental income, 30 million NOK



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management fees and 30 million NOK turnover in Nydalen energy centre. The company had an operating income of approximately 140 million NOK in 2014.

The reasons for selecting Avantor as a case is due to their role in the Nydalen area and their responsibilities of the multiple property projects taking place, which consist of high levels of complexity. Avantor is dependent on their network due to the large-scale property development, compared to the small size of the company with only 40 employees (Avantor 2016a). Thereby, Avantor is dependent on their inter-organizational relations to bring the right expertise to complete their projects. Avantor is considered to be a PBO, where the constructions and property development they engage in, require expertise in project handling, coordination and communication. The company has built an outstanding reputation with an impressive portfolio of property development in the Nydalen area, such as the Norwegian headquarter for the media company Egmont, Nydalen Torgbygget and the residential buildings in the area (Avantor 2016c). Their network is considered to be the key factor for Avantor in delivering successful projects, making the company an interesting case in studying network capabilities. Analyzing how Avantor create and sustain their network capabilities that are, according to the literature, derived from its organizational-, dynamic- and project-capabilities are the essential data that will be used to answer the research question.

The most complex project undertaken by Avantor is the re-location of BI Norwegian Business School (hereby BI) to the Nydalen area. This project will be used as an example to demonstrate how Avantor manage their networks to handle their projects and how they operate to meet their client's requirements. The complexity of this project was connected to the economical instability in the environment making it difficult to get funding and loans from the banks, the size of the project, and the demands and requirements from BI which made the process of negotiation more challenging. Using the complex project of BI specifies the scenario of analyzing Avantor in a network setting, providing relevant examples for the study. Avantor and the example of BI will be further discussed in chapter 4.

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One of the major reasons for BI choosing Nydalen was due to the decision of constructing Ringen metro line that included the opening of Nydalen metro station made by the government (Oslo Kommune 2004). The planning and the implementation process of the project started in the late 1990s and the construction work began in year 2000. Nydalen metro station was opened on 20<sup>th</sup> of August 2003, and the Nydalen area was now connected to the rest of Oslo. The development of the Nydalen area has been significantly faster than forecasted and the metro line, Ringen, has been a major driving force, amongst the massive residential and business developments in the neighborhood. The settlement of BI, contributed in making the Nydalen area one of the largest workplaces in Oslo (Oslo Kommune 2008).

#### **1.4 Agenda**

The agenda for this thesis is to first introduce the topic of the research and explain the relevant theories focusing on the phenomena of network capabilities. The formulation of the research question and the background for choosing the specific case of Avantor and BI as an example was introduced in the above sections. The next chapter regarding the methodology will explain the methods used to conduct this business research. The research strategy is based on literature of research methodology (Yin 1994; 2003; 2014) and follows the process of systematic combination (Dubois and Gadde 2002b).

Chapter 3 will discuss the theoretical background to provide an applicable foundation to answer the research question according to the literature. This theoretical foundation was summarized to a framework of the creation and sustainability of network capabilities in a complex project setting that was used to structure and guide this thesis. Chapter 4 will present the industry Avantor works in to understand the case study at a deeper level and to familiarize with Avantor's role and competitiveness in the industry. This chapter provides the thorough overview of the case chosen and how Avantor and the project of BI is used to study the phenomena of network capabilities and how these capabilities are created and sustained in this specific case. The findings from the research is also presented in the same chapter and follows the structure of the framework according to how Avantor establish, maintain and learn from its relationships in a network setting.

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The last two chapters in the thesis are the discussion and conclusion of this thesis. The discussion is derived from the findings from the research, matched with the framework and analyses Avantor in a complex project setting. The chapter will evaluate Avantor's ability to create and sustain network capabilities. The conclusion will be based on this discussion, summarizing the key findings and contributions of the thesis.

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## 2. Research Methodology and Methods

Yin (2009 p. 26) defines research methodology as a “logical plan for getting from *here* to *there*, where *here* may be defined as the initial set of questions to be answered and *there* is some set of conclusion or answers about these questions”. Research method is simply a technique for collecting data (Bryman and Bell 2011). The following chapter will provide a thorough description of the research strategies performed in this thesis, defined as “a general orientation to the conduct of business research” (Yin 2009 p. 27) and how the research process has been handled. The research process concerns the literature used in developing a framework as a guideline for structuring this research, and how the specific case study was used as a tool to collect data. This thesis is based on a qualitative research of a single case study of the company Avantor, in a network setting, handling multiple projects in the Nydalen area. Data was gathered through in-depth and informal interviews as well as secondary sources. The complex project of the re-location of BI to Nydalen is used as an example to map how Avantor handles their projects. Furthermore, the findings on Avantor and the BI project were used to answer the research question, and develop theory concerning the topic of network capabilities. A discussion of the quality of the research will also be given in order to outline the creditability and trustworthiness of this study.

### 2.1 Research Strategy

Defining a research question “is probably the most important step to be taken in a research study” and provides “clues regarding the appropriate research method to be used” (Yin 2009 p. 27). The research question of this thesis is formulated as follows:

*“How do project-based organizations create and sustain network capabilities?”*

Following this research question, we investigated a PBO, Avantor. PBOs may be companies that operate in industries concerning mega-investment, such as city expansion or infrastructure development and requires inter-organizational relations. Moreover, these companies are dependent on the network they are embedded in and the companies network capabilities are argued to be core competencies in order to achieve success (Walter et al. 2006). Since the research question is formulated with “*how*” companies create and sustain network

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capabilities, the study is characterized to be more explanatory and the use of a case study was the preferred research method (Yin 2014). The goal of this thesis was to identify how network capabilities are created and sustained. In addition, asking how network capabilities are created and sustained not only encouraged investigating the life cycle of the development at different stages, but also exploring how companies sustain these capabilities on a daily basis. In order to capture this phenomenon, the study investigated a real life event, exploring a company's routines, activities and operations and how these may lead to the development of network capabilities. When choosing a real life event a qualitative view seemed advantageous in order to conduct the study (Yin, 2003). The advantage of choosing the ontological orientation of a qualitative strategy is that it "embodies a view of social reality as a constantly shifting emergent property of individuals' creation" (Bryman and Bell 2011 p. 619). Hence, the term of interpretivism is adapted to this thesis to study the social world and the meaning of social actions to analyze the phenomenon of network capabilities (Bryman and Bell 2011).

The research approach of this study will follow an abductive logic (Dubois and Gadde 2002b), that is, it does not follow the pattern of pure deduction nor of pure induction (Kirkeby, 1990; Taylor et al., 2002; Kovacs et al., 2005). Dubois and Gadde (2002b) suggests an approach based on systematic combining grounded in an abductive logic to be used in network research on case studies, which tend to have a continues process in confronting theory with the empirical world. The combination of (1) theory, (2) a framework, (3) the empirical world and (4) the case is used to match and draw direction and redirections of the understanding of the empirical phenomenon. The methodology for this thesis follows the same process of systematic combinations. In this section, the component of theory, the framework and the case will be presented, while the empirical world will be described in the data section.

### *Theory*

The objective of the theory in systematic combination is to discover new things and contribute to theory development (Dubois and Gadde 2002b). In this thesis the combinations of the gap in the literature and the reality of a company's ability to create and sustain network capabilities in a project based setting will contribute

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to theory development. The abductive approach is chosen since the purpose is to gain *new* knowledge (Andreewsky and Bourcier, 2000; Kirkeby 1990; Taylor et al., 2002; Kovacs et al., 2005). Strauss and Corbin (1990) proposed that it is not necessary to review all previous literature, as this might restrict the opportunity to gain new knowledge. The main theoretical topics of the thesis are network theory, strategizing in networks, network capabilities and theory of complex project theory, as these create a suitable foundation for discovering new knowledge related to network capabilities. Further, by conducting this research, new knowledge of the development of network capabilities may be derived for PBOs in a complex project setting. Thus, one may keep in mind that the abductive approach is argued to provide a reasonable, but not necessary logically conclusion (Danermark, 2001).

### *The Framework*

The next part of systematic combining considers framework development to structure a study. A framework may take two forms, tight and pre-structured or loose and emergent and is used as an analytical guideline to confront theory with the empirical findings (Miles and Huberman 1994). A tight and pre-structured form may lead to locking the researchers on analyzing the full view, while the loose form may lead to data overload. Dubois and Gadde (2002b) suggest that in systematic combining a framework should be tight and evolving. As the aim of this thesis is theory building, the framework is developed accordingly. Hence, the empirical data may be used to highlight new issues regarding network capabilities.

The framework for this study was developed based on the theoretical foundation from the literature regarding network theory, strategizing in networks, network capabilities and complex projects, and the framework was used to match with the *reality* where the *reality* is derived from the data collected and investigation of the case chosen. In the words of Andreewsky and Bourcier (2000), an empirical event or phenomenon is related to a rule, but an abductive approach interpret or re-contextualize individual phenomena within a contextual framework. In line with this, we summarized the theory into a framework as a guideline that illustrated the development of network capabilities based on three stages taking place at organizational and project level. The purpose was to match the information

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gathered from the research to this framework to map out the directions of how network capabilities are created and sustained.

### *Case Study*

As mentioned above, Yin (2014) suggested that “*how*” questions tend to lead to the use of case study. Hence, following the systematic combination approach, a case study design was chosen and used as a tool to provide the researchers with the empirical findings for this study, and finally turning the case into a product (Dubois and Gadde 2002b). Case studies emphasize the rich, real-world context, in which complex phenomena occur (Eisenhardt and Graebner 2007; Siggelkow 2007; Yin 2009). Moreover, a case study is preferred when “examining contemporary events, but when the relevant behaviors cannot be manipulated”, and study the direct observations of the events and interviews of the person who are part of the events (Yin 2009 p. 34). The contemporary event of this study is the development of network capabilities in complex projects, and was studied with close observations and interviewing employees at Avantor and its network to reveal what events had an impact on the development of their network capabilities through their project systems.

In the words of Eisenhardt and Graebner (2007), one of the frequent challenges to theory building concerns case selection. Yin (2014) suggests that as a solution to this, the researcher should consider the steps of (1) defining the case and (2) bounding the case. Firstly, the definition of the case will be given in the next sections, following with bounding of the case in the last sections. The definition and the unit of analysis in this study is the company Avantor. As Avantor is the only organization that is studied, this is defined as a single case study (Bryman and Bell 2011). The choice of a single case study has previously been criticized for lacking material for replication and comparison (Eisenhardt 1989; Pettigrew 1990), and thus lack the opportunity to be generalized. However, the theoretical background in this thesis will solve this challenge by providing a base for comparison (Langley 1999). Another advantage of a single case study is that it “can represent a significant contribution to knowledge and theory building by confirming, challenging or extending the theory” Yin (2009 p. 60), making it a good fit for this thesis. Yin (2003) distinguishes between five single case study types: (1) the critical case, (2) the unique case (3) the revelatory case (4) the

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representative or typical case, and lastly (5) the longitudinal case. Studying the development of network capabilities, this research has a *longitudinal* approach as it is concerned with how a situation is changed over time (Bryman and Bell 2011), that is, how the network capabilities of Avantor have evolved along with their projects and how the company manage to sustain them. With longitudinal elements, we analyze archival information from Avantor and from the project of BI.

Avantor was a good selection for this type of case, due to its strong role in the multiple construction projects for the city development of primarily the Nydalen area in Oslo. Moreover, Avantor has shown successful results through their projects (Avantor 2016c), making the company an interesting case to study network capabilities. They are undertaking a set of complex projects and are dependent on their network to complete their projects. Therefore, investigating how Avantor strategize in its network may provide insights in how network capabilities are created and sustained. Another prior reason for choosing Avantor was, due to our access to the data and close communication, which is an advantage in performing single case studies, requiring a close contact with the case company.

As researchers, we explored activities in several units of the company, from organizational level and project level as well as with its network to understand the different functionalities and responsibilities of Avantor. The essence of a case study is that “it tries to illuminate a decision on why they were taken, how they where implemented and with what result” (Schramm, 1971; Yin 2009 p. 37). The researchers analyzed the main departments in Avantor; the project department, the maintenance department and the management of Avantor, to capture routines during and after projects and how the management strategizes within the organization. In order to understand the organizational structure and culture, an observation of the employees across the company was also done. With only 40 employees and its flat structure, Avantor had high level of transparency. This again gave a detailed and real-world view of the daily activities of the company. Moreover, the researchers got an enriched description to map out both relevant and important factors that influence the development of network capabilities. It seemed necessary to investigate the process of network capabilities from all stages



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to get an overall perspective of the development, as the analysis and observations provided knowledge and information of where and how decisions were made. Hence, it provided the researchers with the insight perspectives in the life cycles of individuals- and/or small group behaviors, managerial and organizational processes and the sustainability of network capabilities.

According to Bryman and Bell (2011), what distinguishes a case study from other research designs is “the focus on a situation or system, an entity with a purpose and functioning parts” (p. 45). Thus, this study was bounded to focus on the phenomena of network capabilities, which includes exploring the process connected to the company’s network and inter-organizational relations and their ability to handle the activities initiated to execute a complex project in a network setting. We investigated the processes behind the development of network capabilities to discover where this phenomenon occurs in the company. The case will use the most complex project undertaken by the organization, that is, the moving of BI to the Nydalen area in 2005 to illustrate this phenomenon. The reason for this approach is to illustrate Avantor’s network by linking the case to a specific project (Yin 2014). Thereby, the case is bounded on the specific setting of Avantor’s operations and network development, and uses the project of the movement of BI as an example of its operations and project handling for understanding Avantor’s network capabilities.

## **2.2 Data Collection**

According to Yin (2014), data collection in a case study may be conducted from six sources: documentation, archival records, interviews, direct observation, participant-observations and physical artifacts. However, the preparation for data collection can be complex itself, thereby in case studies, learning to integrate real world events with the needs of the data collection plan is important (Yin 2014). The research of this study relies on qualitative methods and data was collected from in-depth and informal interviews, observations and secondary data in the form of company documents such as annual reports, news articles, PowerPoint slides and literature concerning the topics. The strengths of qualitative interview are that it “focuses directly on case topic” depending on the target, and it “provides explanation as well as personal views of perceptions, attitudes and meanings” (Yin 2009 p. 106). However, biases may occur due to reflexivity.

*Interviews*

The main goal when interviewing employees from Avantor was to define how they perform their projects and how they establish-, maintain- and learn from their relationships. The formal interviews were conducted with seven people from various functional areas and organizations lasting on average from 60-120 minutes. Four managers from Avantor were interviewed; the CEO, the Project Leader and the Operations Manager. In addition, we interviewed the former CEO of Avantor, who had a central role in the development of the Nydalen area, as well as the BI project. From BI, the interviews were conducted with two central employees who were Board Members at BI at the time of the re-location. Lastly, we found it relevant to interview a former politician, who had a central role in the decision of implementing the Ringen metro line that connected Nydalen to the rest of Oslo.

The reasons for choosing these people were due to their knowledge on the field of Avantor's networking strategy and complex projects, especially the BI project. Moreover, their personal views and responsible areas were reflected by the interviewees themselves, which provided us with thorough information on the process of how they implemented their ideas and the meaning of their roles in Avantor and in the BI project. An example is Avantor's previous CEO and his relation to the Board Members of BI and whether their connection affected the decisions making on the re-location. Further, the interviews were used to see if there were any contradicting views among the interviewees and were dealt with secondary resources to provide evidences on the differing opinions. The table below provides an overview of the different topics and aims for each interview.

**Table 1 Summary of Topics:**

<b>Interviewee and role</b>	<b>Topic</b>	<b>Aim</b>
Jens Petter Tøndel, Board Member BI	BI, Nydalen/ Avantor; the process of the BI project and the relationship between BI and Avantor.	To get insights in the example project of BI/Avantor and how the deal was developed.
Bjørn Kolltveit, Board Member BI	BI, Nydalen/ Avantor; the main elements that affected the decision-making and the relationship between BI and Avantor.	To get insights in the example project of BI/Avantor and how the deal was developed.
Øystein Thorup, Managing Director	Avantor and their ability to create networks and how they value it. The internal processes within the organization and their daily activities that may or may not affect its network. How the short-term and long-term goals affect the routines in the company and the understanding of the organizational structure within Avantor to evaluate the level of transparency across projects and among the employees.	Get an overview of Avantor as a company. What are the focused areas in the organization, and how do they manage their projects and operations. Get insight in what the most important attributes in the relationships are, how Avantor establish relationships, maintain these relationships and learn from them. Get an overview of the different interactions in their projects, and figure out how Avantor handle their relationships.
Terje Løvold, Project Leader	Avantor and their ability to build networks. The general process Avantor follows before, during and after a project. The role of a project leader and what task they are given and define the positive and negative outcomes of a project to understand what implications it provides to the company and the Nydalen area.	Define how Avantor perform their projects through a project perspective. Get insight in what the most important attributes in the relationships are, how Avantor establish relationships, maintain these relationships and learn from them. Get an overview of the different interactions in their projects, and figure out how Avantor handle their relationships.
Roy Frivoll, Operations Manager at Avantor	BI, Nydalen/ Avantor; the organizational procedures done by Avantor to execute and finalize the BI project.	Get an overview of the role of Avantor in the BI project.
Christian Joys, central in the development of Nydalen/BI, previous CEO Avantor	BI, Nydalen/ Avantor; the relationship between Avantor and BI and the development of the Nydalen area.	Get an overview of the strategic objectives of Avantor, and a description of the role of Avantor in the BI project. How the deal was negotiated and how Avantor managed to get BI to choose Nydalen.
Leif Nybø, formal politician, central in the development of the Ringen metro line	Ringen metro line; the decision- and implementation process, and the meaning of public transport in Nydalen.	Gain insights on political and governmental decisions affecting Avantor.

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The two main types of qualitative interviews are *unstructured interviews* and *semi-structured interview* (Bryman and Bell 2011). This study followed a semi-structured approach, also known as an in-depth interview, and it typically refers to “a context in which the interviewer has a series of questions that are in the general form of an interview schedule but is able to vary the sequence of questions” (Bryman and Bell 2011 p. 467). The semi-structured interviews were opened with an introduction of the main purpose of the study, in order to provide a professional setting. Furthermore, the researchers asked the interviewee questions regarding his position and background, opening up for a warm atmosphere for further questions. This provided an overview of where the individual is situated in the hierarchy.

An interview guide was developed (see exhibit 1 and exhibit 2 for the interview guides) according to the literature and the summarized framework and was constructed to ask questions in a strategic way on the specific topics of network and capabilities. When interviewing Avantor, the data were collected from an organizational level. Questions related to partner selection was a focus due to the fact that Avantor is a PBO, and asking whether they established new relations or remain to their previous partners to execute their multiple projects was highly relevant to gain insight on how they manage their network. The topic regarding partner selection also provided information of how Avantor values trust in their network. In addition, information on how Avantor prepare and work to meet the expectations for their clients and how they include the right people from their network to outperform their projects was also collected, this revealed how Avantor establish and maintain relationships. By this, we could analyze how the network of Avantor reacts when Avantor is to start their next projects, which again could map out the level of Avantor’s power in their network.

On the topic of capabilities, questions were asked about routines and activities within the firm to map out organizational and managerial procedures and to see what factors may lead to development of Avantor’s network capabilities, hence collecting data on a project level. The goal was to get an enriched description of the procedures of preparing for projects, handling projects and evaluating projects and whether these routines changed for future projects. This was also connected to understanding how Avantor handle past and new experiences after working with a

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certain partner. Questions such as “*How does Avantor implement past learning into their next project?*” were asked to capture the essence of learning and to reveal the process on how they transfer learning within the company.

A second interview guide targeting data collection from the example project was developed. The interview guide developed for BI interviewees followed the same structure as the one created for Avantor. However, the questions were structured more towards the literature regarding project, trust, relationship and negotiation of contracts to gain a perspective on the level of flexibility and commitment offered by Avantor. Moreover, the data also provided the researchers with how Avantor communicate and coordinate their projects with their clients and network. The purpose of the interviews was to understand how Avantor handle their clients according to their requirements and demands, and what factors that led to “deal-makers” or “deal-breakers” scenarios. One of the main goals of this part of the data gathering was to map to what extent Avantor has power or how they are able to control the completion of their projects. The interview objects of BI were in addition asked about their perception of Avantor. By this, we were able to get insight on Avantor’s position and reputation in the network and follow Avantor’s contribution from both a horizontal and vertical level.

The challenge of the interviews was to structure the interview questions in the right and unbiased manner. However, a semi-structured approach allows flexibility to the answers (Bryman and Bell 2011). This flexibility contributed in revealing the true perspective of the interviewee, which also made it possible to capture other important surfacing issues relevant to the topic. During the interviews, the researchers were able to alter the questions to fit the directions of the research question. Moreover, a semi-structure method allowed the researchers to ask open questions and avoid questions that provide only yes/no answers. One main disadvantage of open questions is that it may be time consuming; in making the right questions, conducting the interviews and in coding the answers in a favorable way. As mentioned above, the interviews were planned to last from 60-120 minutes. And according to the flexibility aspect, the set of questions were not necessarily the same for all interviewees, as the main objective in qualitative studies is getting rich, detailed answers (Bryman and Bell, 2011, p. 469). Additionally, according to code of ethics, the interviewee were informed that the

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interview will be recorded, and the interviewees were also made aware that the information will solely be used for the purpose of the thesis. Planning in forehand on the location of the interview is important, as company offices are often busy workplaces. The interviews were conducted in silent meeting rooms to reduce the likelihood of the recording being of low quality (Bryman and Bell, 2011).

The sample of the in-depth interview where purposive, that is, the sample was not chosen on random basis (Bryman and Bell 2011). Purposive sample felt natural in the study as the researchers had the access to the top management of Avantor that gave the opportunity to get a wide and deep understanding of Avantor, as well as the various functional perspectives such as, construction and property development. Interviewing executives also provided an overview of how the organization is viewed from the top. Furthermore, the researchers used their access to the executives to reach out to managers on lower levels providing the study an additional bottom-up view on what factors that are vital regarding the complex project of constructions in the Nydalen area. In addition, the presences of the researchers at BI also gave the access to get in touch with the top management who where involved in the project of moving BI to the Nydalen area.

### *Secondary Data*

News paper reports, annual reports, administrative documents such as proposal, progress reports and other internal reports (Yin 2011), PowerPoint slides and other written reports of event, were collected to perform this study. Documentations may be used as the form of evidence to create creditability and trustworthiness to this thesis, thus increasing the quality on the study with validity of the data (Bryman and Bell 2011). The strengths of documents as evidence are that it is a stable source that can be reviewed, and is not created as part of the specific case study, as well as there may be multiple and endless documents to verify a specific event or setting (Yin 2014). Though, finding the relevant documentation may be challenging, as well as it is difficult to avoid selectivity.

As our main purpose was to explore the development of network capabilities, it was important to find documentations on both internal and external operations of Avantor. An organizational map was provided, as well as a model on how Avantor normally execute a project. Organizational documents tend to be

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heterogeneous that provide the basis of business and management within the organization (Bryman and Bell 2011). This challenge was met by gathering documents from other institutions, such as BI. Documentations from BI provided evidence on their strategic position and role as an educational institution in Norway, more specifically in Oslo, contributing in understanding why Nydalen was a potential location. Here, Avantor's and BI's webpages, and other public documents were also strong sources of information (Bryman and Bell 2011).

#### **2.4 Data Analysis – Matching, Direction and Redirection**

According to the process of systematic combination, the matching process consists of going back and forth between the framework, data sources and analyses (Dubois and Gadde 2002b). Data should not be forced to fit, rather categorized through data. In the words of Yin (2009 p. 128), “data analysis consist of examining, categorizing, tabulating, testing or otherwise recombining evidence to produce empirically based findings”. This thesis follows the strategy of theoretical sampling, coding, theoretical saturation and constant comparison. The purpose is to break down the data to identify the different parts and levels of the data, hence coding and categorizing the data before comparing to keep “close connection between data and conceptualization, so that the correspondence between concepts and categories with their indicators is not lost” (Bryman and Bell 2011 p. 571). The interviews were recorded and were further coded to discover the most relevant points. Recordings were beneficial, as the researchers became highly focused on what was said and made it possible to follow up on interesting points (Bryman and Bell 2011, p. 482).

As the literature on network capabilities has guided this study, the findings were examined and categorized according to the theoretical framework, analyzing the main topics of creating and sustaining network capabilities, that is, the establishment-, maintenance- and learning from relationships. The interviewee's answers provided evidence on the daily routines and tasks in the organization and how these where in line with the long-term perspectives of the company. These findings where coded to fit the strategic decisions at the organizational level, which again was proved to show how new learning and capabilities where achieved within the organization through project handling that have lead to successful outcomes at the project level. This also revealed the success factors that

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lead to profitable achievements for Avantor, such as undertaking new projects and acquire new clients. Moreover, how this influenced the position of Avantor in the network they are embedded in. Such as the relations already established from previous projects within the industry of property development and how these are managed and transferred to the next project.

The data from BI were used to match with the data gathered from Avantor to categorize the actions and initiatives Avantor obtained, from a client perspective. This data was used to analyze Avantor's project handling characteristics derived from a complex project. Moreover, matching was also done with data and the theoretical framework developed to examine Avantor's network management ability and how Avantor's dynamic capabilities contribute in sustaining network capabilities. The combining and re-combining of the data, and again with the framework, provided different insights on the phenomena of network capabilities. A thorough description and explanations of the findings will be given in chapter 4, while chapter 5 will connect the empirical findings with the theory by matching it to the framework developed from chapter 3.

## **2.5 Ensuring Quality in the Research**

Guba and Lincoln (1989) suggested that the quality in qualitative studies should be judged according to the criteria on credibility, transferability, dependability and confirmability to achieve trustworthiness. This section will discuss the quality of the research according to the four criteria. The research needs to be carried out through good practice and findings need to be correctly understood in order to achieve this (Bryman and Bell, 2011).

Credibility involves ensuring that the research process is believable. The requirements is linked to the richness of the data gathered and if they provide a thorough explanations. In this study credibility was achieved through triangulations (Denzin 1978; Yin 1994; Dubois and Gadde 2002b) that is the combination of several sources of evidence was used to confirm the findings. Such as the information gathered from Avantor was double-checked with the example of BI if the processes explain by Avantor contradicted to information provided from BI. Also, several secondary resources were used in order to conduct this study that was used to verify information given by the interviewees.



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These secondary resources are available online and may also be used by others to measure the creditability of this study.

The criteria on transferability reflect on whether the findings can be generalized and if the results of the research can be transferred or compared with equivalent studies. As this study basically explores how Avantor creates and sustains its network capabilities through a case study, the concept of transferability is somewhat limited. However, if the researchers provide a tick description (Geertz 1973) of the research context and rich details of the research process, those who wishes, are able to transfer the same study on PBOs. This study is based on the theories of network, strategizing in networks, network capabilities and complex projects presented by scholars. The general agreement concerning these theories is provided in the theoretical framework in the next chapter. Matching the findings with the same theories, or this theoretical framework, is possible for others, thereby this research is considered somewhat transferable.

In qualitative studies, the effort lies in maximizing the level of dependability that consists of whether a study is replicable or not. As for this study, the interviews were conducted on six managers from Avantor, BI and one Politician. This is possible for other researchers as well, but it will be impossible to achieve the identical social setting and measuring the same social setting twice is not doable. In addition, by the time other researchers replicate the study, the same managers that were interviewed might be replaced, and the new managers may respond to the questions differently. Therefore, an exact replication of the study seems impossible. In order to maintain a high level of dependability, the researchers are encouraged to describe the settings during data gathering and how this ever-changing context affected the way the research project was conducted. Guba and Lincoln (1989) suggest that researchers should adopt an auditing approach in order to achieve dependability, that is, making sure that all data gathered are kept, and are of accessible manner for others. Accordingly, recording the interviews conducted increased the dependability of the study (LeCompte and Goetz, 1982). An approval from the companies might provide the opportunity to further explore and evaluate the quality of the findings and results. The highest level of confirmability was the goal, that is, not to let the researchers personal values nor perspectives affect the study conducted. To avoid this bias, guidance from the

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supervisor was important to ensure that the research to be done in an understandable, correct way. Moreover, we will describe the negative instances that may affect the observations and data gathering that will also be discussed in the section of limitation by the end of this thesis.

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### 3. Theoretical Foundation

In order to have a theoretical foundation for answering the research question, relevant theoretical insights need to be reviewed. This section will provide a discussion of the fundamentals in network theories, how a network affects the performance of a firm, how firms can strategize in these networks, the conditions of network capabilities. Furthermore, insights regarding complex projects will be discussed, as it is the setting in which we study the phenomenon of network capabilities. In the end, we summarize these insights from previous research into a framework for understanding how companies create and sustain network capabilities. The framework forms the theoretical foundation for the study.

#### 3.1 A Network Business Context

As companies form inter-organizational relationships and therefore operate to a larger degree in networks, the need for network capabilities has accentuated. In order to understand the phenomenon of network capabilities, it is important to understand the role and importance of a network itself. Network theories generally argue that “the pattern or structure of ties among organizations and the tie strength and content have a significant bearing on firm behavior and on important firm outcomes such as performance” (Zaheer et al., 2010). Moreover, Bergenholtz and Waldstrøm (2011) suggest that network theory discusses the value of inter-organizational relations and networks that may provide access to resources (Håkansson and Snehota 1995; Powell et al. 1996; Uzzi 1997) trust, (Gulati 1995; Zaheer et al. 1998) power (Cook 1977; Burt 1992) and status (Kim and Higgins 2007; Jensen 2008). The literature on networks includes two main perspectives; *strategic networks* and *industrial networks*. Both views comply with a relational perspective on strategy and have much in common, in example in terms of performance, though; the perspectives also have some differences (Dyer and Sing 1998). To understand network capabilities, both of these perspectives are interesting. This section will provide an overview of both, the performance effect of these, and how firms can strategize in the network business context.

A network can be seen as something a company establishes purposely through the strategic network perspective (Jarillo 1988). Or it can be seen as something a company is embedded in regardless of choice through the industrial network perspective (Gadde et al. 2003). Jarillo (1988) introduced strategic networks as

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“long-term, purposeful arrangements among distinct but related for profit organizations that allow those firms in them to gain or sustain competitive advantage vis-a-vis their competitors outside the network”. He argues that the relationships among firms in a network are important for their competitive position, and that the strategic network is an important form of organization emerging from Williamson’s article of transaction cost (Williamson 1991). Powell (1990) further described the most important characteristics of this form of organization to be; “an indirect control, a relational means of communication, medium flexibility, and a high commitment between actors”, implying that there is a dependency between actors within the network. The network form is argued to be open-ended, however, it has restricted access and precluding partnerships with others (Powell 1990). The literature on strategic networks further explains how firms can be viewed as embedded in networks of relationships with other organizational actors, and how their position in a network affects their economic performance (Gulati 1998). Following, a strategic network can be defined as the system of relations between actors, which defines the opportunities and constraints of the firm (Gulati 1998). Moreover, Gulati (2000) argued that a strategic network is composed of enduring inter-organizational ties, of strategic significance and includes strategic alliances. Examples of such strategic networks can be alliances, joint ventures, R&D collaborations, partnerships, board interlocks and clusters (Gulati 2000).

The literature concerning industrial networks focuses on how business relationships form networks, rather than how the organization can form their own network (Gadde et al. 2003). As stated in Jarillo (1988), Johansen and Mattson (1992) defined the industrial networks as “complex arrays of relationships between firms”. These relationships are established through interactions between firms, and the priority of relationship care were argued to be important for managers, as competing is a matter of positioning in networks (Johansen and Mattson 1988). Further, the industrial network has been explained as consisting of ties and nodes, where a number of nodes are related to each other by specific threads (Håkansson and Ford 2002; Borgatti and Halgin 2011). The networks are representing some relationship, or lack of relationship, between the nodes (Brass et al. 2004). Moreover, the focus is on the relations between actors, whether they are organizations or individuals, providing opportunities and constraints on

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behavior (Brass et al. 2004).

The common factors of these perspectives are regarding the effect a network has on the performance of a company. As literature concerning strategic networks, the literature concerning industrial networks argues that a firm's presence in a network might both enhance and limit their opportunities (Harrison et al. 2010), clarifying the importance of using the network the business is embedded in. Harrison et al. (2010) argued that the network(s) an organization is embedded in, has implications for its actions, and thereby the performance of firms. The argument that a network have positive effects on performance, were previously supported by Håkansson (1987), arguing that a firm's relationships "are one of the most valuable resources that a company possesses". This is further supported in the literature concerning strategic networks where scholars have argued that a firm's performance might be strongly affected by their inter-firm ties (Dyer and Singh 1998; Gulati et al. 2000). Through a relationship, firms may gain from both direct and indirect benefits such as new knowledge and market access; this means a unique access to new relations, organizations, resources and competencies (Håkansson and Snehota, 1995). Dyer and Singh (1998) identified relation-specific assets, knowledge sharing routines, complementary resources and capabilities and effective governance of being possible sources of competitive advantage evolving from a firm's strategic network. Furthermore, Gulati et al. (2000) argued on how a network can influence the firm's conduct and performance, as the nature of competition might be affected by the network structure, network membership and tie modality. Moreover, a network might break down or build entry barriers in an intra-industry structure, or a network can be seen as a resource in itself, resulting in access to other firm's resources and capabilities (Gulati et al. 2000). The networks can also be able to reduce contracting and coordination costs, enhance innovation and contribute to firm survival (Gulati et al 2000; Ahuja, G. 2000; Uzzi, B. 1996).

Still, the network also might bring some constraints on a firm, evolving from unproductive relationships; the lock in, lock out effects and learning races (Gulati et al. 2000). Ford et al. (1998) argue that a company's network position is within the boundary of "its relationships and the activity links, resource ties and actor bonds that arise from them". The position might have an effect on the

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opportunities the network can offer, in example, Gadde et al. (2003) suggest that companies should avoid too self-centered perspectives in a network because it is under the process of continuous combination and recombination between business units that new resource dimensions are identified and further developed. As the network business context both enhance and limit the opportunities of a firm, their strategizing within the network is important.

### ***3.1.1 Strategizing in a Network Business Context***

As the previous section illustrates, a network can both enhance and restrict opportunities. This means that companies should consider strategizing on the topic of how to manage in a network setting (Harrison et al. 2010). An important part of strategizing is having an overview of the network and its dynamics, that is the network horizon (Holmen and Pedersen 2003). In order to influence their network horizon, managers should map, analyze and influence counterparts' mediating functions (Holmen and Pedersen 2003). According to Håkansson and Ford (2002), strategizing in networks involves "the task of identifying the scope for actions, within the existing and potential relationships about operating effectively with others within the internal and external constraints that limit that scope". Ritter et al. (2004) argue that firms are continuously involved in the managerial operations of its network, and through their actions the structure of the network and performance of firms are developed. In an industrial network perspective, networking actions are related to managing in networks and not the managing of networks (Håkansson and Ford 2002; Harrison et al. 2010).

Håkansson and Ford (2002) explore three paradoxes in business networks that have managerial implications, that is, *opportunities and limitations*, *business relationship* and lastly *control*. In addition, Gadde et al. (2003) used these paradoxes to explore strategizing issues within a network. The first paradox concerns the constraints that might inflict the firm when it is interacting and creating relationship. A strategic issue may be that a company needs to identify and establish appropriate levels of involvement that is necessary with the individual partners (Gadde et al. 2003).

Relationships provide the opportunity for the company to influence others, but the same relationships are also a force for others to influence the company and the

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strategic action taken, stem from this relationship (Håkansson and Ford 2002). The second paradox is that the company itself is the outcome of these relationships. According to Gadde et al. (2003), the company needs to balance between being influenced and influence, in order to achieve the desired interdependency with its different counterparts. The third paradox stems from the extent of control and co-operation within a network. Companies try to control the network they are part of. However, too much control may limit innovation within the network (Håkansson and Ford 2002), as the network becomes a hierarchy (Gadde et al. 2003). Hence, the strategic issue for a company is to identify the level of control that is most desired and suitable for their position (Gadde et al. 2003). The management should encourage a continuous understanding of the network for all participants, while at the same time also aim for control and modify its own and others relationships (Håkansson and Ford 2002).

The two last paradoxes point out that “managers do deliberate actions in order to mobilize from their existing network position” (Harrison and Prenkert 2009). Harrison et al. (2010) explore these paradoxes to suggest five approaches of deliberate strategizing initiatives firms may implement with various types of counterparts, at different point in time, within a business network. The five different strategies concern the involvement of the key counterpart of the focal firm. The strategies are stretching from no involvement, to a highly involved counterparts expected to take part in strategizing processes by developing visions and plans that fits with the focal firm. This implies that firms might strategize differently in order to manage in their networks, and that it is important for firms to find the right balance to achieve the benefits of having a network.

### ***3.1.2 Network Capabilities***

Network capabilities concern handling the relationships in the network a company is embedded in, accordingly, in order to achieve the opportunities generated from the network firms should engage in creating and sustaining network capabilities. In the previous literature, scholars have described a company’s network competence as the same as network capabilities (Äyväri and Möller 2008). Ritter (1999) focused on the degree of network capabilities, defining it as the degree of network management task execution and the degree of network management qualification possessed by the people handling a company’s relationships. A high

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degree of task execution is divided in two; (1) *The relationship specific tasks* involve having a high degree of initiation ability, exchange activity skills and coordination skills. (2) *The cross- relational tasks* include the skills of planning, organizing, staffing and controlling activities. Further, a high degree of network management qualifications can also be divided into two types of skills; (1) *The specialist skills* include technical-, economic-, and legal- skills as well as network knowledge and experiential knowledge. In this type of skills, the experiential knowledge is argued to be of particular importance, enabling an ability to use previous experience with partnerships to anticipate situations and select the correct action to perform (Ritter 1999). (2) *The social qualifications* can be described as the ability to perform useful and preferred behavior in social settings. Important factors are communication ability, conflict management skills, and sense of justice, cooperativeness and emotional stability. These skills are of special importance when individual interactions occur. The main points of these definitions were supported by Kale et al. (2002), when they described similar attributes like partner knowledge, internal communication, coordination and relational skills as the most important factors of network capabilities. These factors were argued to complement each other, and the level of network capabilities should increase as these factors increase (Kale et al. 2002; Walter 2006).

Foss (1999), describes the importance of network capabilities by explaining how a firm might achieve new capabilities from interaction with their network. These capabilities include in example collective learning, which is proven valuable by the VRIN framework from RBV (Barney 1991). He further argues that the competitive advantage of a firm may be sustained by interaction effects between the capabilities within the firm, and the common capabilities of the network. The importance of how to manage partnerships was further supported by Anand and Khanna (2000). They argued that firms should learn to manage their partnerships in order to handle contingencies resulting from personal, cultural and organizational attributes. More performance effects were measured in an empirical study by Walter (2006), confirming that network capabilities affected performance in sales growth, sales per employee, profit attainment, perceived customer relationship quality, realized competitive advantages, and long-term survival.



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Following this, one can argue that a firm's network is of great importance for its performance and competitive advantage. This means that the skills to develop and handle a favorable network might affect the profitability of the firm. By this, scholars argue that a network capability can be seen as a core competence of the firm. This means that companies must invest in network competencies to gain competitive advantage (Ritter 1999). Ritter (1999) argued that the importance of network capabilities for a company's corporate success could be derived from the interest of applying technologies available by inter-organizational relationships.

Äyväri and Möller (2008) wrote a critical review on previous literature, developing a framework of network capabilities. According to the authors, the previous literature raise several questions regarding the existence and development of network capabilities (Äyväri and Möller 2008), and they also encourage more attention to the problem setting of creation and emergence of network capabilities, initiating the subject for this thesis.

### ***3.1.3 The Creation of Network Capabilities***

As the focus in the thesis is on how firms create and sustain network capabilities, we will provide an overview of the previous literature on this field. When discussing network capabilities, scholars have argued differently concerning where the capability is created, and who the holders of such a capability are. The discussion has mainly evolved in if the network capabilities are an inter-organizational capability, commonly held by all firms in a network, or if it is held by the organization, as an organizational capability (Möller 2007).

When discussing network capabilities as an inter-organizational phenomenon, scholars argue that the capabilities are created by the experience in the interaction between the companies. The joint solutions and the common culture that are developed from the interaction between companies results in network capabilities (Sivadas and Dwyer 2000; Lambe et al. 2002). This implies that the inter-organizational network capabilities will be relationship specific, and is influenced by the organizational network capabilities of the firms participating in the network or relationship.

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Äyväri and Möller's (2008) literature review on network capabilities suggests that most scholars agree on defining the network capability on an organizational level, and that the development of a network capability is experience based, resulting from experiences from previous network relationships. In order to simplify the explanation, Äyväri and Möller (2008) adapted a model by Grant, viewing the organizational network capability (ONC) as "the sum" or the combination of lower level capabilities and skill sets like individual and group skills (Äyväri and Möller 2008). This view focuses on competitive advantage, with background in the RBV or the dynamic capability approach (Möller 2007). In this paper we will continue to use the organizational level of analysis.

Ritter's (1999) argument concerning the role of network capabilities as handling a company's relationships emphasizes that the quality of relations is important. This lead to focus on a company's capabilities, in which the *cooperative competency*, *collaboration competence* and *joint alliance competence* are argued to be important factors of creating a network capability (Möller 2007). The *cooperative competence* of the company refers to the ability of interacting units (both within and across firms) to adjust mutually (Siwadas and Dwyer 2000). This includes an effective communication and coordination, in the form of negotiating and design of activities. Blomqvist and Levy (2006) proposed the *collaboration capability* as crucial in developing network capabilities, defining it as "an actors capability to build and manage relationships based on mutual trust, communication and commitment". The issue of trust, has been discussed by more scholars (Jarvenpaa and Leidner 1999), and it has proven to be a valuable factor in developing network capabilities. If a company is trustworthy, they are more likely to attract the best network partners (Jarvenpaa and Leidner 1999). Further, in order to have joint success in a network or an alliance, *joint alliance competence* is needed (Lambe 2000). This is defined as the ability both actors have in finding, develop and manage alliances. Lambe et al. (2000) argues that the higher degree of joint alliance competence maintained, the more likely the alliance is to be a success.

In further discussion on what network capabilities are made of, and how you develop those kinds of capabilities, scholars have tried to develop frameworks for the development of network capabilities. Äyväri and Möller (2008) argue that scholars have elements in their frameworks such as: *Firm level systems*,

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*processes, functions and tasks* referring to both routines and systems contributing in maintaining network relationships (Möller and Törrönen 2003; Ritter and Gemünden 2003). *Interfirm level systems* (Johnson and Ford 2006), which means to combine the technical systems of more firms in the network (Lorenzoni and Lipparini 1999). Further, they discuss the importance of *personnel resources* like managerial talent (Spekman et al. 2000) as an important factor when developing network capabilities. The technological skills, team working skills and relational skills are also argued to be important when developing such a capability (Möller and Törrönen 2003, Walter et al. 2006). However, in addition to these skills, *the mindset of the firm* (Spekman et al. 2000) is important in creating and maintaining network capabilities. *The experience of collaborative arrangements* will also be central as a building block of capabilities (Kale et al. 2002; Lambe et al. 2002; Jarrat 2004). Further, a *learning and absorption capability* (Lorenzoni and Lipparini 1999; Kale et al 2002; Lambe et al 2002; Jarrat 2004) is argued to improve a company's ability to build networks. Following, the *visioning capability* (Möller and Halinen 1999) is related to the management's ability to build the right networks, and see potential networks. Lastly, they argue that an *ability to identify partners* (Lambe et al. 2002) is crucial when developing a network and thus network capabilities.

The previous arguments had support in Möller and Törrönens (2003) article, where they created a framework based on the supplier's value creation, in a buyer-supplier relationship. In example, they argue that the supplier has a capability base which leads to value creation. This base consists of production capabilities, delivery capabilities, process- improvement capabilities, incremental- innovation capabilities, networking capabilities, relational capabilities, networking capabilities, radical-innovation capabilities and mastering the customer's business capabilities. When focusing especially on the two most relevant for the development of a network capability; networking capability and relational capability, one can argue that the handling of networks (networking capability) and the human aspect (relational capabilities) are very important in adding value for the customer. The article also focuses on inter-personal skills as an important attribute in adding value for the customer, especially regarding technical and teamwork skills. This relates back to the arguments of Ritter (1999) and Kale et al. (2002) in defining network capabilities. Meaning that the capabilities held by

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organizations, affecting network capabilities, might be relational capabilities, alliance capabilities and process capabilities.

As we are looking at network capabilities at an organizational level, discussing network capabilities at an *individual level* are also of relevance. Scholars have argued that social skills are an important attribute in this aspect (Walter 1999). Ritter (1999) also embraces this, by his argument of the social qualifications needed in network management qualifications. Scholars have presented long lists of skills individuals should maintain in order to create network capabilities, Walter 1999 focused on (among others): communication skills, interaction skills, empathy and emotional stability. Spekman et al. (2000) divided the individual skills in two parts; managing alliances and key relationship skills. These two parts consisted of more individual skills, such as negotiation skills and trust, argued to be of importance. The importance of trust and the trusting ability is further highlighted by Phan et al. (2005), which also emphasize the importance of instrumental competence, intimacy and interpersonal sensitivity. In addition to the social skills, Walter (1999) emphasizes the importance of network knowledge and relationship portfolio (experience). This is also related back to Ritter's (1999) article, as a specialist qualification within the part of network management qualification. All of these skills are maintained in individuals in an organization, making individuals highly relevant for the development of network capabilities.

### **3.1.4 Summary**

This section illustrated how firms operating in a network business context will experience that the networks might both enhance and restrict their opportunities. To achieve the benefits of a network, companies should consider strategizing on the topic of how to manage in a network setting (Harrison et al. 2010). The literature on this field has focused on the different paradoxes in this aspect, arguing that the strategic issue for a firm is to identify the suitable amount of control for their position (Gadde et al. 2003). Further, network capabilities concern handling the relationships of a firm is embedded in (Ritter 1999). According to Ritter (1999) it consists of the degree of network management task execution and the degree of network management qualification, which will contribute in gaining the advantage of a network. Knowledge on how to create such capabilities is built from competences like; cooperative competence,

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collaboration competence and joint alliance competence. Referring to the research question, this thesis will evaluate how this phenomenon is expressed in PBOs. Thus, we will look at what characterizes PBOs and projects. In these types of organizations, value is often created through inter-organizational relations, this is making it an interesting network setting to study.

### **3.2 Complex Project as a Network Setting**

A complex project is a typical network setting, as companies performing such projects are dependent on more partners to achieve a good outcome. In order to address this, this section will provide an overview of what a complex project is, the complexity of a project will be defined and a brief discussion on challenges and how firms manage their projects will be provided. Lastly, an explanation of the learning opportunities in complex projects will be provided.

The complexity of a project can be defined as a “system in term of the number of variety of components and interdependencies” (Hobday 1998; Davies and Mackenzie 2015). Projects, such as large-scale engineering, may involve huge complexities and can also be defined as megaprojects, that is, projects involving the investment of more than \$1billion (Van Marrewijk et al. 2008; Davies and Mackenzie 2014). These projects can be the constructions of energy- and telecommunication infrastructure, city expansion or other major developments, and are difficult to manage (Van Marrewijk et al. 2008; Scott et al. 2011). The challenges and risks of a project are related to its size, uncertainty, schedule urgency and institutional process (Flyvbjerg et al. 2003; Davies and Mackenzie 2014) which further brings difficulties from its complexity on project implementation, integration and processes (Van Marrewijk et al. 2008).

Researchers have discussed how companies manage their projects, and found that PBOs have been used for managing increasing product complexity, fast changing markets, cross-functional business expertise, customer-focused innovation and market and technological uncertainty (Hobday 2000). These organizations tend to have an expertise within project management, however, the research on project management is being challenged due to the widespread adaptations of project modes that are different than projects executed in a traditional way such as civil engineering construction projects (Pitsi et al. 2014). Davies and Mackenzie (2014)

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point out that there are little or no focus on issues regarding the level of organizational and managerial capabilities required in a complex project. For PBO's, learning through projects is important in order to gain competitive success and the ability to capture and transfer the learning to their wider organizations (Middleton 1967; DeFillippi 2001; Keegan and Turner 2001; Brady and Davies 2004). The problem with project-based learning is that they are preformed during the project-based activities but has a non-routine behavior (Davies and Brady 2004). However, PBOs tend to execute projects of similar categories that increases the chances of repeatable activities that further increases the likelihood of pattern development.

### ***3.2.1 Challenges in Complex Projects***

As a complex project involves a dependency between partners, situations found in complex projects need actions where each party must be mutually adjusted to the actions of other parties (Morris 2013). New organizational relations are created during a project and these tend to be affected by the complexity and political turbulence of the environment (Pitsi et al. 2014). By implementing govern mechanisms, that is, the process of institutional, market or network organization through legal, normative discursive or political processes (Bevir 2013; Pitsi et al. 2014) a firm is able to avoid risks. By this, one is able to “govern actions that further defines the organizational structures, roles and responsibility of boards and managements, control systems, auditing and reporting mechanisms and lines of communication, and the complexity of contractual design and execution” (Pitsi et al. 2014).

van Marrewijk et al. (2008) explored how a project culture and project design supports successful cooperation between partners working in a megaproject. Contracts are designed between partners and seek to address the many interests and agreements of complex projects. However, they do not fully capture the complexity of the multiple, fragmented subcultures at work in a project culture. Indeed, van Marrewijk et al. (2008) argued that the cultures within megaprojects tend to be vague as there are many collaborators but no single centre of calculation and control. Moreover, managers operate with *bounded rationality* (March and Simon 1958; van Marrewijk et al. 2008) that is “constrained by limited searches, imperfect knowledge and finite time” resulting in that decisions

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are made when solutions, problems, participants and choices flow around and coincide at a certain point. van Marrewijk et al. (2008) concluded that in complex projects the budget tends to overrun, the forecasts are inflated, and the costs are the results of the normal practice within an organization of professionals operating with limited knowledge.

According to Gidado (1996) the complexity in the construction industry can be related to two dimensions (1) uncertainty and (2) interdependence. Dubois and Gadde (2002a) argued that these dimensions are managed by tight couplings among firms in other industries, while construction companies tend to rely on fewer interfirm adaptations and on short term market based exchange. The term loosely couple explains when “coupled events are responsive, but that each event can also preserve its own identity” (Weick 1976). It is by combining the tight coupling in individual projects and loose coupling in the permanent network a construction firm is able to manage its uncertainty and interdependence. This pattern also increases the productivity within the construction industry, however, innovation is hindered. In addition since the construction industry tends to be project based, the issues of coordination become more difficult. As individual projects tend to be of tight coupling the network structure is constant and only few connections are made with other projects and performance flourishes from the boundary of an individual project. The drawbacks of this are that interfirm cooperation becomes complicated, the boundary of individual projects standardizes firm’s operations and hinders learning. Dubois and Gadde (2002b) suggest that construction industries should put less emphasis on project boundary and rather increase coordination.

### ***3.2.2 “No project is an island”***

Engwall (2003) argued that “no project is an island” and that a project needs to be conceptualized as a history-dependent and organizationally embedded unit to gain a broader perspective of firms’ project management. He analyzed the interior process of a project and linked it to its previous and simultaneously courses of activity, to future plans and to standard operating procedures, traditions and norms of its organizational context. By exploring the historical aspects of companies executing on a project, one may learn how projects import knowledge, procedures, structures, experience, values and ideas from their organizational

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context and how they are exported further to a next project (Engwall 2003). This is for example by reusing their previous technical design, established documentation systems and models or the movement of their key workers from one project to another (Karlson 1994; Nobeoka 1995; Björkkegren 1999; Lindqvist 2001; Engwal 2003). Thereby, a project takes off from the organization's previous knowledge, personal experience, current and available resources that bring input to the current project and provide perspectives to the pre-phase of a project.

However, a megaproject may be too complex for individuals and organizations involved as the complexity may exceed their prior experiences and capabilities (Davies and Mackenzie 2014). Davies and Mackenzie (2014) showed that organizations tend to create "system of systems" when dealing with complex projects at two levels: *system integration* and *meta system integration*. The systems integrator "coordinates the network of organizations involved in the phase of design, construction, integration testing, commissioning and handover of a fully operational system" (Davies and Mackenzie 2014). The meta system integration establish standardized program management and planning is perceived to meet deadlines ahead of time. This requires highly structure on the control processes of the firm. Moreover, it allows the collaboration between other parties within the project to identify system-wide solutions in an earlier stage that makes the integration process more efficient. The importance of collaboration further strengthens the argument that a complex project might be a typical network setting, making it an interesting business setting for this research.

### **3.3 Network Capabilities in Project Based Organizations (PBOs)**

When using complex projects as a network setting, it is interesting to see the role of network capabilities, combining organizational-, project- and dynamic capabilities. Organizational capabilities (Chandler 1990) and dynamic capabilities (Teece and Pisano 1994) have provided the strategic management literature with the basis and frameworks on analyzing firms' performance, making these capabilities central in a PBO. As this thesis investigates network capabilities in a complex project setting it is also important to introduce David and Brady's (2000) term of project capabilities that is argued to be an essential capability for firms in a project setting. Further in this section, an overview of organizational capabilities



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will follow, as network capabilities are capabilities embedded in the organization. Lastly, the importance of dynamic capabilities in a project setting will be explained, as this is an important capability for the improvement and sustainability of network capabilities in PBOs.

### ***3.3.1 Project Capabilities as a Response to Uncertain Environments***

The increase in task uncertainty, diversity and changing external conditions creates a pressure for companies, making them move towards becoming PBOs (Galbraith 1973; Davies and Brady 2000; Melkonain and Picq 2011). Davies and Brady (2000) suggested that Chandler's (1990) framework on capabilities could be used to illustrate how suppliers are able to build capabilities required when expanding to new products and services. They further argue that firms can achieve economics of repetition when "putting in place organizational changes, routines and learning processes to execute a growing number of similar bids or projects at a lower cost and more effectively". Together with organizational and dynamic capabilities, project capabilities are regarded as the third way of necessary capabilities for firms to perform in turbulent environments (Melkonian and Picq 2011). Project capabilities (Davies and Brady 2000; Brady and Davies 2004; Davies and Hobday 2005; Davies and Brady 2015) refer to "the distinctive managerial knowledge, experience and skills, which are located within a single organization (a firm) and required to establish, coordinate and execute projects". This further highlights that project capabilities are important for the firm, in order to carry out different type of projects in an efficient way (Davies and Brady 2004).

Current projects are built around the firm's skills in existing technology and markets, and the new project capabilities are built on base-moving strategies (Davies and Brady 2015). Hence, a project may be regarded as a tool for implementing a firm's strategy for innovation and diversification (Davies and Brady 2015). In words of Davies and Brady (2000) with project capabilities, companies are able to succeed in completing complex projects within budget, on schedule and able to achieve unique customer expectations. Success is not achievable if each capability are developed in isolation, thus the change in one part of the organization requires the change in other parts. Complex projects require participants to be able to deal with both predictable and known risks,

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whilst at the same time having the flexibility to adjust plans and modify routines when conditions change (Davies and Brady 2015).

Brady and Davies (2004) presented the two-way process of how project capabilities are built, that is, during interacting and learning between firms; firstly, the bottom-up view contains the exploratory phase, where each project contributes to the organizations constant evolution and change. Secondly, the top-down view contains the exploit phase that is achieved over time where organizational routines support project performance. These include learning capabilities, which occurs through the institutionalized knowledge available when performing on a new mission and through the capitalization and collection of the new learning from each of these missions (Brady and Davies 2004). More precisely, a new project is characterized by *exploratory learning* with new bids and project practices required to cope with unfamiliar activities. Over time, the firm benefits from *exploitative learning* as the firm uses the learning gained to develop the company-wide capabilities, resources and routines needed to execute next and multiple projects.

Morris (2013) recognizes that capabilities that are defined at the organizational level need to be tailored according to the requirements of specific firms and projects. He further argued that the top-down and bottom-up sides of project capabilities should be combined. Melkonian and Picq (2011) illustrated this by referring to HR-processes: at the top-down side organizational systems select and prepare skilled individuals to the different missions, these individual pick up learning and achieve feedback to progress, that is crucial for a project to be successful. At the bottom-up side, the organization develops structure on routines for efficient decision-making in terms of resource allocation, restructuring and recruiting processes.

Major drawbacks of PBOs are that firms often face conflicting needs within differentiation and integration systems, when the process becomes dynamic (Melkonian and Picq 2011). A project may be potential means of shaping or reshaping the strategies of a firm that could further affect the company at a firm level as the framework of the company is being affected by the constant changing environment that have an influence on organizational practice or the strategic

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making process. This makes the process of projects even more complex as the strategic and organizational structures are constantly redefined through emergent and divergent practices and the dilemma on integration and differentiation occurs. PBOs are able to achieve competitive advantage and sustainable performances if they in an efficient manner are able to handle this dynamic process, that is, project capabilities (Melkonian and Picq 2011).

Even though some knowledge is provided in the literature on project capabilities, the more recent work of Davies and Brady (2015) encourages further research on this field. They provide three main contributions based on previous literature and suggest that project capabilities are developed and mobilized to deal with the variety of contingent conditions facing an organization (Eisenhardt and Martin, 2000; Davies and Brady 2015) involving to explore the new initiatives and exploit current routines. They argue towards Chandlers (1990) framework, and distinguish between project capabilities, operational and dynamic capabilities claiming that firms depend on knowing when and how to maintain current project capabilities according to the current circumstances. Lastly, they suggest that the relationship between dynamic and project capabilities are reciprocal, recursive and mutually reinforcing (Davies and Brady 2016). This is interesting in the complex project context, as we are studying network capabilities as an outcome depending on these capabilities.

### ***3.3.2 Organizational Capabilities as Important Building Blocks***

Organizational capabilities are the firm-specific knowledge and skills developed by learning through trial and error, feedback and evaluation, and are important when firms tend to adjust strategies in an unstable environment (Chandler 1990; Melkonian and Picq 2011; Davies and Brady 2015). Chandler (1990) distinguished organizational capabilities between strategic- and functional capabilities. Strategic capabilities refer to the top management skills and learned routines needed to support strategic planning, coordinate functional activities and diversification decisions (Chandler 1990; Davies and Brady 2015). Functional capabilities are “the day-to-day operations performed by a firm’s functional departments including production, distribution, purchasing, research, finance and general management” and are known as the regular practices within the firm (Chandler 1990; Melkonian and Picq 2011; Davies and Brady 2015).

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Accordingly, functional capabilities lead to competitive advantage for the firm when it is able to move down the learning curve within their daily and functional activities more rapidly compared to its competitors. By moving rapidly from low to high-volume production, distribution and marketing, firms obtain economies of scale (Chandler 1990; Davies and Brady 2016). Strategic capabilities have a stronger ability on achieving competitive advantage, as the firm is better able to respond to a constantly changing environment with strategic decisions and also more rapidly compared to its competitors (Chandler 1990; Davies and Brady 2016). This relates to the project setting, making organizational capabilities an important success factor in handling complex projects.

### ***3.3.3 Dynamic Capabilities in order to Improve Network Capabilities***

Network capabilities in a project setting involve a need for the above-mentioned capabilities. The capability is maintained in the organization, thus as an organizational capability. However, as we study the phenomena in a project setting, both the project- and dynamic capabilities of a firm affect the level of network capabilities maintained in the firm.

Dynamic capabilities are a term used to analyze change in organizational capabilities and is defined as “the firm’s ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments” (Teece et al. 1997). Dynamic capabilities involve adaptation and change, because they build, integrate or reconfigure other resources and capabilities (Helfat and Peteraf 2003). Moreover, in a fast-changing environment the capabilities that make a firm better able to adapt rapidly and repeatedly can lead to strategic advantages (Eisenhardt 1989; Teece et al. 1997; Killen et al. 2011).

Helfat and Peteraf (2003) provided a framework of how capabilities are built over time by combining the RBV with dynamic capabilities and introduced the concept of the capabilities lifecycle to map out the patterns and paths of how dynamic capabilities are evolved over time and what opportunities it gives. These are followed by three stages; (1) the founding stage, involving the creation of the capability, (2) the development stage, referring to “an ex ante plausible way of attempting to accomplish the end result at which a capability aims” (Winter 2000) and lastly (3) the maturity stage, which provides the capability to be embedded in

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the memory of the organization and entails capability maintenances (Helfat and Petraf 2003). They argued that with dynamic capabilities firms are able to redeploy, and in addition firms may use renewal or replication to respond to opportunities, such as entering different geographical areas. Here, opportunities flourish from external factors, while internal factors could provide opportunities improving productivity (Helfat and Peteraf 2003). Successful firms tend to specialize in activities that utilize in similar capabilities, however, even if the capabilities are somewhat similar, they still lead to the firm being able to enter a variety of new markets and product lines (Penrose 1959; Richardson 1972).

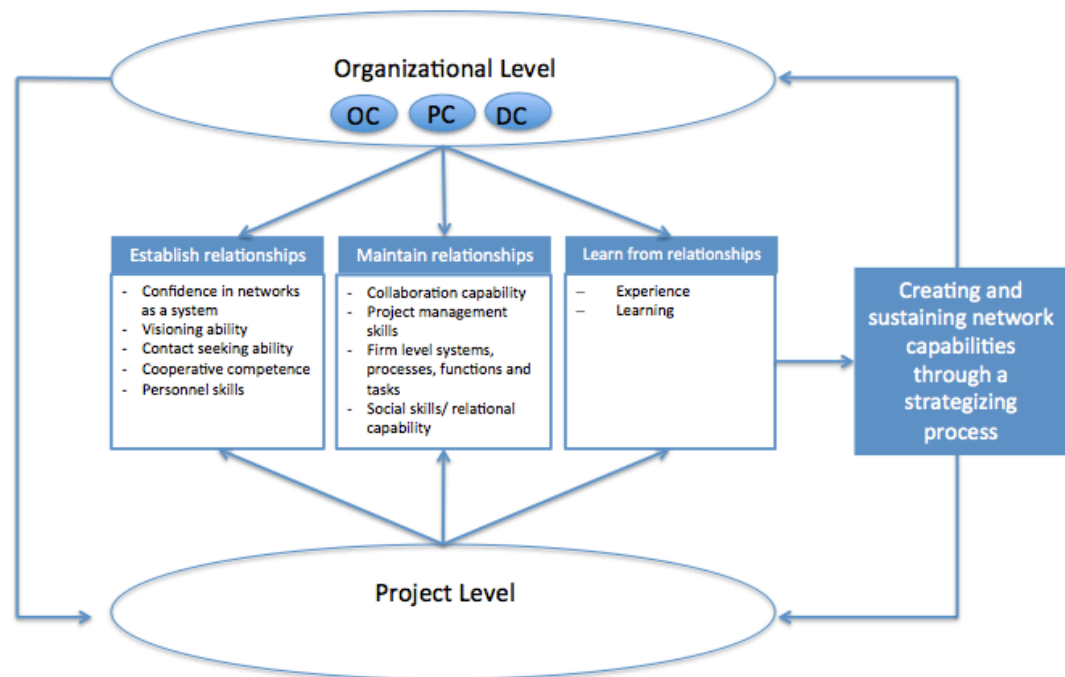
### **3.4 Towards a Framework for Understanding Network Capabilities**

As this thesis investigates the phenomenon of PBO's network capabilities in a setting of complex projects a theoretical foundation based on insights from previous research and theories of network, network capabilities and complex projects was provided in the above sections. The term of network capabilities was defined as the ability to handle a company's relationship, and according to the literature, partner knowledge, internal communication, coordination and relational skills are seen as some of the most important components of network capabilities. As previously discussed, both Ritter (1999) and Kale et al. (2005) had an impression of what network capabilities consist of, and thus how to create it.

Based on the insights from the theoretical discussion, this section presents a framework (illustrated in figure 1) for how we may understand the creation and sustainability of network capabilities in a complex project setting. Figure 1 describes how network capabilities are developed in projects through a process involving three stages; Establish relationships, maintain relationships and learn from relationships. The base of capabilities already maintained at the organizational level feed these stages, and the outcome of the process is the creation of network capabilities. Network capabilities further feed back to both the project level and the organizational level for further improvement, making it sustained through an iterative process. Figure 1, builds on the previously developed framework by Äyväri and Jyrämä (2007), in combination with insights from extant literature on networks and projects, supporting the argument that relational competence is of great importance when developing a framework for network capabilities, as it is relationships that construct networks. The framework

will function as a summary of the discussed theoretical foundation and guide this study, the further analysis and discussion. This section explains the framework, including an elaboration of the three stages, and how to understand the dynamic aspect of the sustainability of network capabilities, as well as the interface between the organizational- and project levels.

**Figure 1: Framework for creating and sustaining network capabilities**



### 3.4.1 Establishment of Relationships

As mentioned, the illustrated figure is built on the previous discussed theory, as well as the framework of Äyväri and Jyrämä (2007), consisting of two parts, focusing on different factors enabling network capabilities. The first part concerns the *establishment of relationships*. The skills and abilities needed to establish relationships have been summarized in four main abilities, consisting of the skills scholars have argued to be the most important in this aspect. In order to establish a network or a relationship, Äyväri and Jyrämä (2007) argued that the company must have *confidence in networks as a system*. This confidence develops by experience, and it is important to trust the function of a network in order to establish a valuable relationship. Second, when a firm retain this confidence, it is easier for them to develop their *visioning ability*. This ability will provide the firm a skill to see potential partnerships, which is important to outline possibilities for future cooperation. Äyväri and Jyrämä's (2007) article discusses how the ability to "*identify the needs of ones own firm and inform others about those needs*" is

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linked to the above-mentioned capabilities. This ability will contribute in evaluating how the resources of the firms can be combined, and by being thorough in this identification, firms might improve their chances of a good network relationship, making joint alliance effects (Lambe et al. 2000). The previous mentioned abilities further enable an *ability to actively search* for these partners and find suitable partners for the specific project. These searches might be more specified when individuals have the experience of finding which actors they need in the process. Hence, *an ability to utilize one's own and present partners contacts to identify potential new partners* is a relevant capability (Äyväri and Jyrämä 2007).

When moving from finding the partner to establishing a relationship, *the cooperative competence* (Ritter 1999; Äyväri and Jyrämä 2007) of the firm is of importance. At this stage, it will be important to cooperate with the counterpart, and find solutions for the deal, suitable for both partners. A high level of cooperative competence might thus reduce contract and coordination costs (Gulati et al. 2000). This involves among other things the opportunity for flexibility, the importance of trust, negotiating skills and other factors needed to adjust mutuality. Implying that both the partner search and the development of a deal include a need for *personnel skills* (Äyväri and Jyrämä 2007), as it is a personal interaction required for an agreement between two parts. The relationship of the individuals in the organizations might be crucial, and thus social skills are of importance.

### **3.4.2 Maintain Relationships**

The second part of the figure concerns maintaining relationships. In this part, the ability to take business partners interest into consideration is important. As emphasized, *social skills* are important in building social bonds in the network (Walter 1999). In the negotiation part, *an ability to share ones own knowledge and accept and utilize others knowledge* (Äyväri and Jyrämä 2007), is argued to be important and bring resource benefits to the firms participating in the network. The skills and abilities needed to maintain relationships have been summarized in four main points, consisting of the skills scholars have argued to be the most important in this aspect. *Collaboration capability* (Blomqvist and Levy 2006), including companies abilities to build mutual trust, their ability to communicate and the commitment between them. Maintaining the relationship suggests that the

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firms are able to pull their resources and routines in a time efficient way, as well as in a way in which they will be able to use the resources to create joint alliance capabilities. The *coordination capabilities* of a firm may be a part of their project management skills, making the firms able to coordinate their activities and resources in an effective way which can be beneficial for both parts, and thus make the network profitable (Äyväri and Jyrämä 2007). Äyväri and Jyrämä (2007) argued that “*an ability to manage time efficiently in order to devote enough time to nurture relationships and coordination capability*”, is linked to the coordination capabilities, which addresses a systematization of routines, this capability is also relevant internally in the firm.

Further, this involves the need for *firm level systems, processes, functions and tasks*, referring to both routines and systems contributing in maintaining network relationships (Möller and Törrönen 2003; Ritter and Gemünden 2003). This factor also includes the *Interfirm level systems* (Johnson and Ford 2006), which means the ability to combine the technical systems of more firms in the network (Lorenzoni and Lipparini 1999). As previously discussed, the skills of individuals of the organization are important, this concerns both the relationship between individuals in the firm, and the *social skills* of the employees in the firm, which are important to maintain a profitable relationship. The most important social and relational skills concerns around building trust, having good communication skills and being an active partner in the network. This relates to theory on strategizing in networks, arguing that a company participating in a network must find the right balance of activity in the network in order to achieve the benefits of it (Håkansson and Ford 2002). As network capabilities are analyzed at an organizational level, one must look at the organization as a team consisting of individuals, whereas all have some individual specific skill. Further, one must look at how the group uses these skills, thus how the interaction with other firms is carried out in developing and maintaining network capabilities.



### ***3.4.3 Learn from Relationships***

The learning part of the process focuses on the ability the firm has to learn and use their experiences to make the developed and maintained relationship creating a network capability that the firm will be able to use. Firms learn through their projects, and should use their experiences on how they have acted in their network and relationships in the project. By following the establishment and maintenance steps, firms create network capabilities, consisting of: partner knowledge, internal communication, coordination and relational skills (Kale et al. 2005). The learning phase further develops these capabilities as something with a potential to be embedded in the organization. At this stage, it will be necessary for companies to maintain a balance between explorative and exploitative learning (Brady and Davies 2004), in order to maintain the best learning opportunities from the relationship. This involves having routines for evaluation meetings after the project to find both positive and negative experiences with the specific project. The learning will lead to a potential new network capability, feeding both the project level, and the organizational level.

### ***3.4.4 Learning Loop, Making the Process Iterative***

As discussed in the section concerning network capabilities, one may argue that in a project setting, dynamic-, organizational- and project capabilities are important building blocks, and a necessity for the development and maintenance of network capabilities. These capabilities are all argued to be important factors in handling a turbulent and complex environment, which must be a base for the companies to be able to establish, maintain and learn from relationships under complex project conditions, and thus develop network capabilities. Figure 1 illustrates a learning loop between the organization level and the project level, framing the best way to develop, sustain and even improve network capabilities.

At the organization level, the capability foundation of a firm will be of importance for further development of new capabilities in a project. Even though a project stand outside of the organization, the firm will use their capabilities in the project, providing the best opportunity for success and improvement. Organizational capabilities are the firm-specific knowledge and skills developed by learning through trial and error, feedback and evaluation (Chandler 1990), and will be important in all stages of the development. Further, as the problem setting states,

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the figure illustrates creating and sustaining network capabilities in PBOs, which implies that the project capabilities of firms are of great importance. The project capabilities will contribute in the fulfilling of the requirements of the project, as well as an organized and structured process, making it easier for firms to develop network capabilities in unstable, turbulent environments. It also includes an ability of innovation, which will be important in developing network capabilities, requiring some creativity and flexibility. The learning aspect of project capabilities also makes these capabilities important in the process of developing network capabilities, as companies maintaining project capabilities are better suited for analyzing the previous projects and learn from this experience. The dynamic capabilities, as a part of this, is also of importance, however this will be more described in the next section concerning the dynamic aspect of the figure. These capabilities provide the firm the opportunity to be flexible, and offer the best solution for their clients and other network participants, resulting in an established network (signed contract), and also the possibility to be flexible in maintaining the relationship.

As introduced, the projects, and thus the process of developing and maintaining network capabilities in the project, are based on the capabilities a firm develop and maintain at the organizational level. This implies that there is a learning loop in the process. Overall, the creation of network capabilities is arguably a part of an iterative process. Beginning in the project setting, companies are dependent on the capabilities sustained in the firm to operate in such circumstances (Davies and Brady 2015). This further affects the three stages of developing capabilities. In the establishment- and maintenance stage of the process, the company acquires new abilities and network capabilities. While at the learning stage, these capabilities are evaluated and further developed, and can be embedded at the organizational level, as network capabilities, again feeding back to the projects of the firm. These capabilities are then used to develop new capabilities at the project level, illustrating that it is an iterative process.

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### ***3.4.5 Dynamic Perspective of the Process***

As we are studying network capabilities in a complex project setting, which is a rapidly changing environment with complex involvements, it is important to be aware of how the firm adjusts to this. In this setting, it is interesting how firms handle the complex environments, and from the literature one can argue that dynamic capabilities are important in order to create and sustain other capabilities in such a specific environment.

The network capabilities developed through the process described by the framework, are dependent on a continuous adjustment to the environment in a long-term perspective. This makes it important to keep in mind how PBOs build dynamic capabilities in order to improve, adjust and change their network capabilities. The overall structure of the figure is accordingly built on the previously mentioned dynamic capability building process introduced by Helfat and Peteraf (2003), including a founding stage, a development stage and a maturity stage. These stages are combined with the network capability process, representing how firms continue to develop their capabilities in turbulent, unstable environments. In this context, literature concerning how firms should strategize in networks is an important element. Engaging in developing dynamic capabilities contributes to a continuous renewal and improvement of network capabilities. This is related to solving the three paradoxes of opportunities versus constraints, influencing versus being influenced, and controlling versus being controlled (Håkansson and Ford, 2002), and is therefore a part of the strategizing. As firms tend to mobilize from their existing network position (Harrison and Prencert 2009), the dynamic capabilities will contribute in gaining the right balance of involvement, and thus achieve the benefits of networks by improving and sustaining network capabilities.

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## 4. Findings and Analysis

The case of this thesis is the company Avantor, and their ability to create and sustain network capabilities. Referring to the intro, Avantor is a city development company concentrating on the development of the Nydalen area. The company is organized by their projects. This involves a need for a broad network, as well as well-organized projects, making Avantor a suitable case company to study network capabilities in a complex project setting. In this section, we will provide a fundament for the case understanding, by introducing the context in which Avantor operates. Further, we will introduce Avantor's organization, properties and projects. The case study will use examples from the BI-project, as an illustration of their work. In order to clarify the background of this project, a description of the re-location of BI will be included. In the end, a section on the findings from the case study will follow, describing Avantor's ability to create and sustain network capabilities. The findings are derived from interviews and secondary resources, outlined in chapter 2.

### 4.1 Background and Context

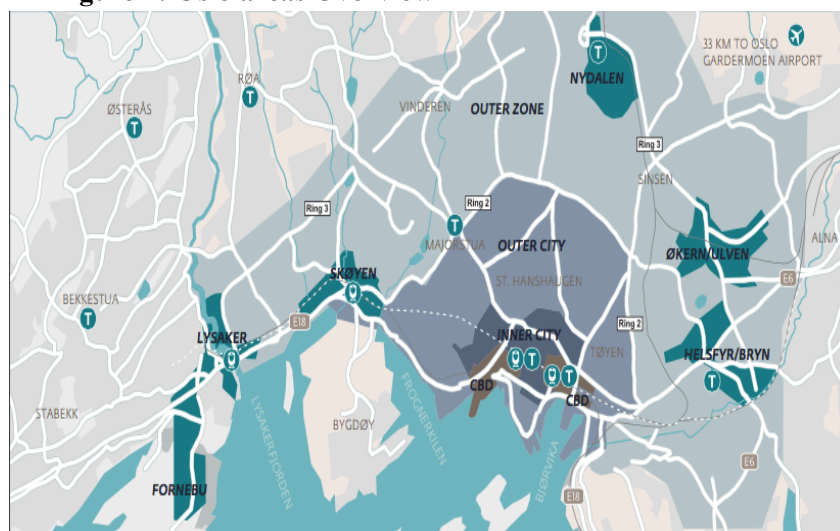
In order to provide a fundament for the case study, one should locate the main competitors of Avantor, and the trends in the market in which they operate. The following section will provide an overview of the current situation, trends and prospects of the industry Avantor operates in. Referring to the introduction, Avantor operates both in the property development industry, the new build market, as well as the letting market (Avantor 2016a;b;c). In this industry overview we will focus on the letting market, concerning rental of commercial buildings in Oslo, as this is the market attracting the final customer of Avantor.

Even though Oslo is growing in a record speed, reports have shown that the latest insecurity related to the oil sector has proven to have a significant effect on the commercial building market (DNB 2016), and thus changed the prerequisites of the market. Companies are careful in their plans of expanding, and there is a demand for a large degree of flexibility in new rental relationships, both in form of running period and the opportunities for reduction of areal as companies are downsizing (DNB 2016). This macro perspective is also supported by the report by Union (2015), arguing that the decrease in oil prices will affect the economy in a negative way, and leading to downsizing. More companies are uncertain and

prefer to continuously renegotiate on a short contract basis, while other companies see this as an opportunity to engage in attractive areas, with less costly rents. Union (2015) argue that there is still an overweight of companies hiring, and that the negative economic trend is expected to turn in 2017. This is supported by Dagens Næringsliv (2015), arguing that despite the uncertainty in the Norwegian economy, the letting market in Oslo is, compared to the other main cities in Norway, the least affected. This relates to the decrease in office vacancy to 8,7% since fall 2015. This percentage is expected to continue to decrease, due to the expected low building and high conversion as a result of the macro perspective. The willingness to pay in the letting market differs a lot, in example financial companies has shown a willingness to pay more in rent than the ones in transportation (DN 2015). This is an important point for the property developers, and can be reflected further, by looking at the different areas, and the companies located there.

Most reports divide the Oslo market into 10 areas (Union 2015; DNB 2016). Within these areas there are numerous of companies performing city development, or single project developments. Since Avantor is one of the few actors with control over a whole area, one can argue that they compete with the other areas, rather than directly with the companies. In evaluating the attractiveness of the different areas, the vacancy and the price of rents in the area are important factors. In exhibit 3, an overview of the attractiveness of the different areas (focusing on these two factors) is provided. Figure 2 provides an overview of Oslo, marking the different areas.

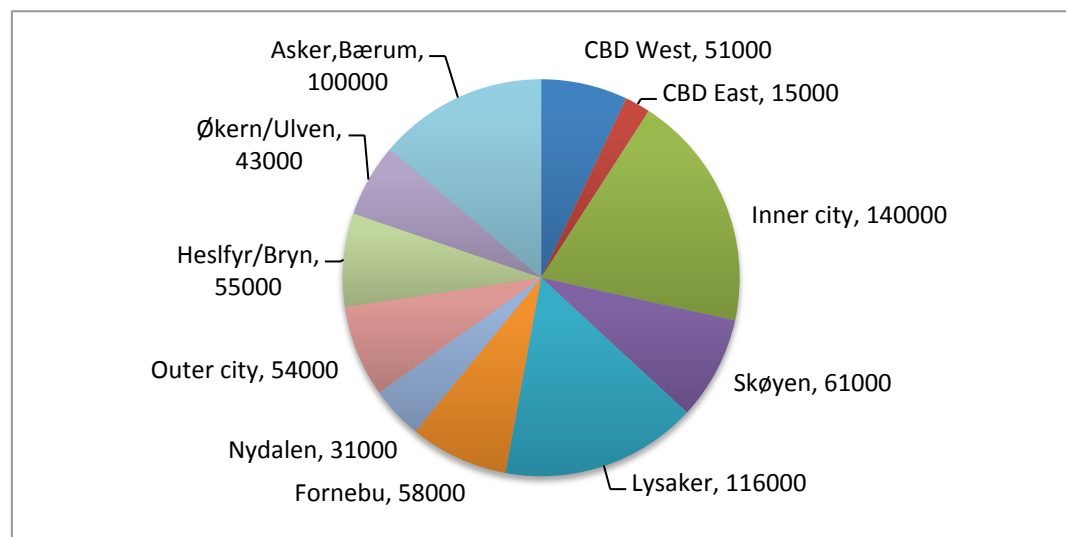
**Figure 2: Oslo areas Overview**



Source: DNB Report 2015

Avantor operates in the Nydalen area, located in the Nordre Aker borough in the northern part of Oslo. Different from most of the other areas in Oslo, the vacancy in Nydalen last year fell by 5700m<sup>2</sup>. The major reason for this decrease is the entrance of Statnett and Itera as well as a new amount of sub-letting space in Gjerdrumsvei 4 (2016d). This is a higher decrease than other popular areas like CBD west, CBD east and Økern/Ulven. Figure 3 further illustrates that Nydalen is one of the areas with the least vacancy per the first quarter of 2016 (DNB 2016). This might reflect the popularity of the area, and it reveals a great potential in Nydalen. The vacancy numbers proves that Nydalen is attractive for several tenants, and most of them tend to remain in the area after the leasing period has expired. The continuous development of the area, such as the refurbishment of Torgbygget makes Nydalen a very attractive proposition.

**Figure 3: Vacancy in the areas of Oslo per 2016 (Measured in m<sup>2</sup>)**



Source: DNB Report 2016

The last years, rents in the Nydalen area has been slightly lowered. The price level today range from 1600-2150 NOK per m<sup>2</sup>, these prices are significantly lower than those in the more central areas, but are expected to follow the market and rise again in 2017. However, Avantor must be aware of the competition from close proximity areas such as Økern/Ulven/ Hasle and Hestfyr/Bryn which is likely to restrict any large price increases.

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In building commercial buildings, the plans of the different companies are regulated by the government. In December 2015, a plan for the development of Akershus and Oslo was accepted, regulating all the building processes in both counties. As the market is relatively unstable due to the challenges in the oil sector, and the Norwegian economy overall, it is expected a low new building volume in the close future (DNB 2016). DNB (2016) expects around 60,000-70,000m<sup>2</sup> new building during 2016, concerned around the areas of Hasle/Økern/Ulven, small projects in Bjørvika, and the building of Sundtkvartalet by Entra and Skanska in the city centre. DNB (2016) further argues that there are possibilities for new building in all the main areas, but these are not expected to be used before Norway experiences an economic upturn. Thus, it is important for the new development builders to sign agreements before they start the construction process, as the risk of vacant properties, remains a risk.

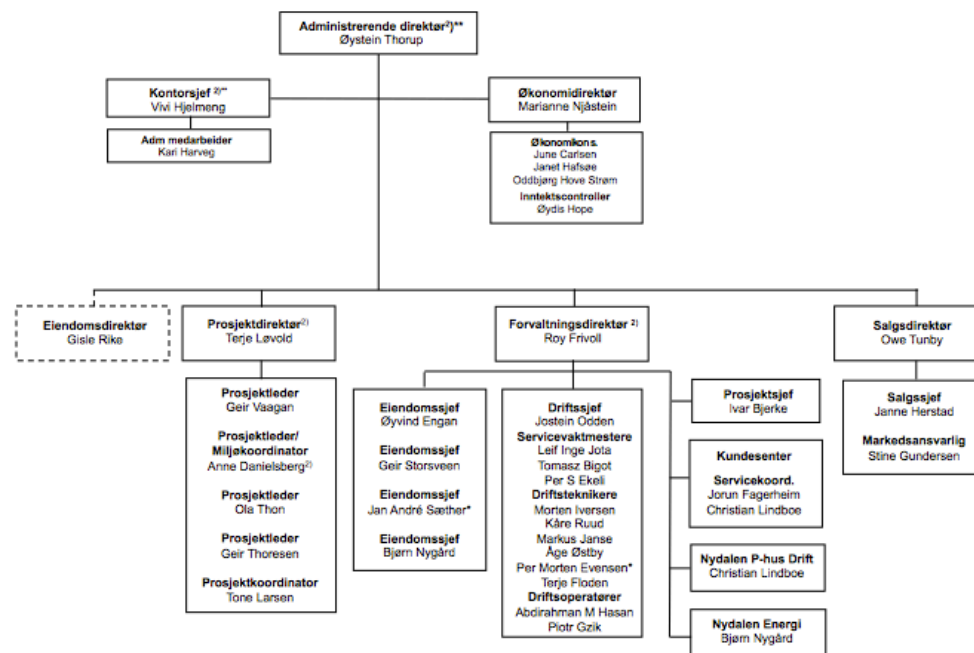
#### **4.2 Overview of Case Company**

Following the industry overview, the case company, Avantor, will be presented. This section will provide an overview of Avantor, and their properties and projects will be examined. Furthermore, an overview of the example project, the re-location of BI, will provide an understanding of one of the complex projects Avantor took part in. This example will later be used in exemplifying how Avantor create and sustain their network capabilities.

### 4.2.1 The Organization

Avantor retains 40 employees, divided in five different departments; the project department, maintenance department, sales department and economy department as well as administration department. All of these departments have one director, having the overall responsibility for their department. In order to illustrate the flat organization structure of Avantor, the organization map as of March 2016 follows by figure 4 (Avantor 2016e).

**Figure 4: Organization map of Avantor**



Source: Avantor 2016e

### 4.2.2 The Properties and Projects of Avantor

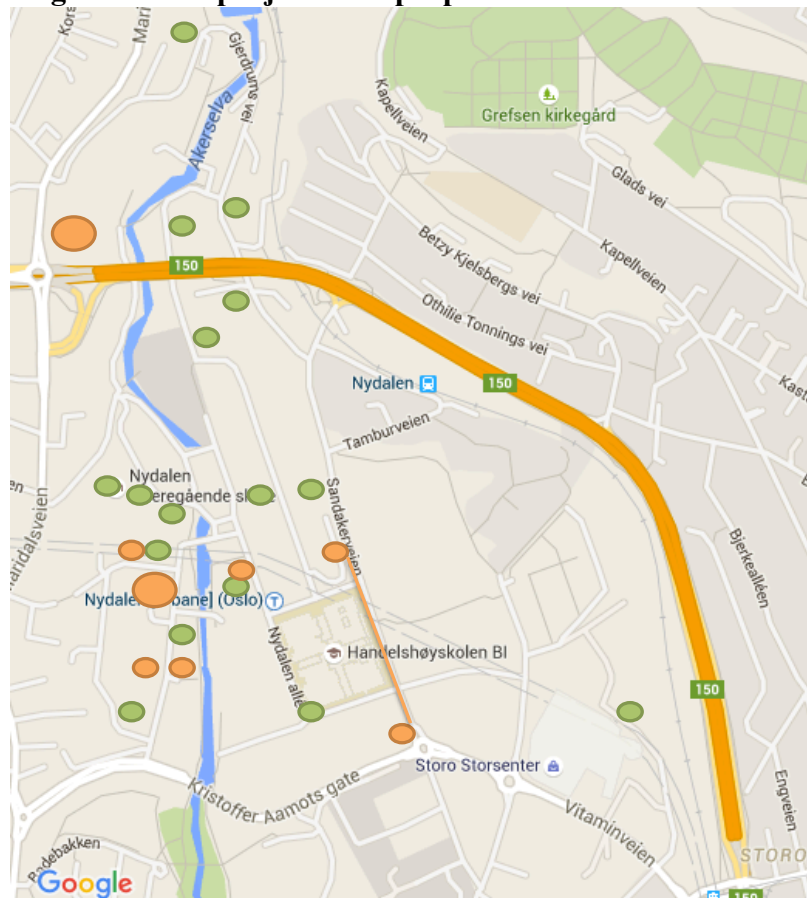
The properties of Avantor consist of large parts of Nydalen, and a full list of these is to be found in exhibit 4. The properties consist of both smaller and larger buildings, as well as empty properties with building potential. Moreover, Avantor is a part of the project from A to Z, the company also function as a landlord with the maintenance responsibility for the projects they have already completed. This expands the list of properties, as it contains non-started, on-going and finalized projects. Following, by figure 5, an illustration of the properties and projects owned by Avantor is provided.

The projects of Avantor are primarily centered on their vision of being the leading city developer. Their focus is on the increased development of the Nydalen area,





as well as the needs of the people living and working in the area. In relation to this, Avantor also contributed to the development of their website and the Facebook page “Destinasjon Nydalen”. In performing their projects, Avantor function as the proprietor. Usually the company dedicates one project leader to participate in each project. This person has the overall responsibility for the specific project, while the company hires other actors needed for the project. By only using one project leader, Avantor manage to keep their employee number low. However, the complexity of each project and the number of actors involved defines most of their projects as complex (Hobday 1998; Davies and Mackenzie 2015). This complexity is solved by flexibility. For example, Avantor always design the interior of the office buildings in cooperation with the customer. Avantor has a framework of standardized office buildings, but offers flexibility and different solutions according to the customer’s needs. Examples of this will be presented later in this chapter.

**Figure 5: The projects and properties of Avantor**



Source: Avantor 2016b, Avantor 2016c

-  Represents the properties of Avantor
-  Represents the ongoing projects of Avantor

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### *4.2.3 The Network of Avantor*

The customer, and all of the actors hired for a project is embedded in Avantor's network. The network of Avantor can be divided into two perspectives, the market perspective and the project perspective. First, in a market perspective, Avantor is dependent on several actors, involving customers, brokers, lawyers and the government. The people and companies using Avantor's buildings are of major importance. However, in some cases, the government is a central actor even before the process of finding companies to use the buildings, as the government has zoning plans, and decides how Avantor can perform their projects. This involves the city government (Oslo Byråd), but also the district departments (Bydelsdepartementet). After the building plan is approved, Avantor is dependent on the brokers that are used by the potential customers. When the customer (companies) search for new office buildings, it is common for them to use brokers to find available buildings and which areas that would be a good strategic fit for their company. The brokers will send a search to the different property companies they see as a fit, and will then pick those offers they consider most relevant for the customer, and work further with these. This makes the brokers a crucial contact for Avantor, as they are dependent to be on the search in order to be considered.

Second, in order to fulfill the complex projects, Avantor is dependent on other actors. That is, architects, contractors and other technical and practical consultants. All of these actors are a part of a large network, in which Avantor is embedded. The dependency and network with other actors, involve a need for contracts. After years of experience, Avantor have developed standard contracts for most of their relationships. These contracts are then standardized in relation to the standard in the market, but Avantor is able to be flexible regarding the contracts, and the CEO states that they never missed a deal because of contract disagreements. However, the agreement of contracts also involves a relationship with the client's lawyers.

Summing up, the network of Avantor is very important for the accomplishment of their projects. There is a mutual dependency between Avantor and their partners, and the company's financial strength and their experience in the market are important factors in determining the success of Avantor.

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#### ***4.2.4 The Re-location of BI Norwegian Business School***

In order to understand the management and network activities of Avantor this study will use the most complex project executed by Avantor, that is, the moving of BI to the Nydalen area in 2005, as an example project. The idea is to explore the circumstances in which the development and the strategies on Avantor's network capabilities. To make an appropriate understanding of the essence of this project, an overview of the main factors of the process will be provided.

BI was founded in 1943 by Finn Øien and started as a business institution offering evening courses with focus on consultancy, auditing and economy. The vision was to provide people with competencies to apply and implement their knowledge in business and organizations. The main building of BI institution was first built in 1988 in Sandvika and BI's position as an educational institution continued to grow. During the 90s BI was the only institution providing education within economy and administration in the Oslo district. This happened through the acquisitions of Norwegian School of Marketing (NMH) and Oslo Business School in 1992. By year 2000 BI acquired Norway School of Retail (NVH) and The Norwegian Shipping Academy (DnS) and the Academy of Research and Insurances (FAK) merged with BI in 2002. BI changed its name to BI in 1998 and made it mandatory that the name was included in all its different fusions.

BI was now present in several areas in Oslo: Sandvika in Bærum, Sjømannsskolen in Ekeberg, Schous Plass and two small units at Sjølyst. BI's management wanted to assess a new location for the business institution as the leasing contract at Schous Plass was due to conclude in 2005. They recognized potential synergies by bringing together the different business institutions in Sandvika, at Schous Plass and at Ekeberg to one location. Various options for localization were assessed, among these Fornebu, Sandvika and Schous Plass stood out as the main options. The final choice became Avantor who offered the rental of a new building in Nydalen.

Avantor and BI signed a contract in year 2002 consisting of the requirements from negotiations and the deadline to finalize the project, set to August 2005 (see exhibit 5 for the copy of the original contract). The BI project also illustrates Avantor's level of flexibility. As the development of a contract between Avantor

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and BI consisted of many sub-deals, and it was important for BI to keep their financials in a good state, this made negotiations challenging. BI's expectations to Avantor was that the company should be able to help make BI an even stronger player in the international educational and research market, as well as to achieve BI's vision, that is to become the best business school in Europe. The main objective of BI was to collect all its five institutions to be in the very same building that should facilitate faculty and staff departments, lecture and study rooms, cantinas, and a library for 9000 students and 800 staff members. Avantor also had to agree on purchasing BI's buildings in Sandvika and at Ekeberg. The moving of an educational institution to Nydalen also required to make the area an attractive place for students to travel, live and interact in. Signing the contract with BI included building student housings, sports facilities and cultural options for the students. However, the most controversial was the deal giving BI an obligation, with the right to buy the BI-building within 2005, with a yield of 7%. BI decided to buy the building right before due date in 2005.

### **4.3 Create and Sustain Network Capabilities in Avantor**

This section will provide a detailed description of the findings from the case study. According to the framework provided in the theory chapter, the most important factors of the network capability process at a project level is to establish, maintain and learn from relationships, by using capabilities from the organizational level. In this section we will look at how this process is reflected in Avantor. Moreover, the section is structured as the framework; first, an introduction of Avantor's vision and what factors that stimulates the achievement of reaching their mission in building a city in the city. Thereby the description of how Avantor establish relationships with their clients, partners and governmental bodies will be analyzed, before moving on to the next part for the framework, that is, how Avantor maintain their relationships. Lastly, we will analyze how Avantor learn from these relationships. As outlined in the methodology chapter, the case study has been shaped through interviews with the Avantor management, the BI management, and a politician (participating in the planning of the Ringen metro line), and is further complemented with secondary research.

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### ***4.3.1 Foundation for making Nydalen an Attractive Area***

Avantor's mission since 1994 has been to build a *city in the city* in Nydalen in the north of Oslo. The vision of city development and expansion further encouraged the analysis of capturing the trends of the *modern society* and the *next generations* to explore how to make the area attractive for all, whether if the individual lived, studied, worked or visited Nydalen. Along with the previous CEO, Avantor aim for their vision by establishing what they named the 4K's, that is, *kommunikasjon* (hereby communication), *kompetanse* (hereby competence), *kultur* (hereby culture) and lastly, *kunnskap* (hereby knowledge). The search for new partners, and thus the establishment of their relationships and networks are based on these four core categories and the Avantor case provided an enriched and detailed descriptions on the main attributes.

The category of communication is related to connecting Nydalen with the rest of Oslo by offering easy access with public transportation. Before the major implementations of the metro and the bus station, the Nydalen area was considered to be a suburban area, as traveling here was complicated and time consuming. According to the previous CEO at Avantor, in order to achieve Avantor's mission, a communication revolution in regards of city expansion was required. Nydalen had a strong potential of becoming connected to the city centre, and the decision of constructing the metro line Ringen was made in 1990 (Oslo Kommune 2004). This investment program was based on extending the metro map along the Highway 3 which connects Oslo city centre with the suburban north area of Oslo. This decision has been the key source of Nydalen becoming a significant part of Oslo. Before the opening of Ringen, the infrastructure on public transport was weak. With the goal of expanding Nydalen, communication and connection of a convenient traveling journey through good transportation facilities was required. The construction of this metro line started in 1990, and as mention, Avantor bought Nydalen area in 1994 which was a huge strategic move along with the timing (Oslo Kommune 2004). Ringen metro line was finalized in 2003, in perfect timing for the BI project.

In order to create culture in Nydalen, the interviews of employees in Avantor showed that the company targeted the media industry. Such as NRK (Norwegian Broadcasting Channel) already had established presence in Nydalen, where they

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rented properties for recordings and productions of programs. NRKs presence gave the basis for the culture in the area and Avantor wanted to establish a permanent culture hub with attracting media institutions to Nydalen. This resulted in that TV2 (established in 1993) also moved some of their production to Nydalen. The recording of “Torsdag kveld fra Nydalen” gave huge PR and marketing advantages for the area, as it was broadcasted on national TV once a week. According to the case findings, the media forces created a culture hub with TV-production as the major driver. This further attracted technological companies focusing on light, sound, animations and television that started to show its presence in Nydalen as the suppliers for NRK and TV2, which created a network effect. Culture was made based on media and commercial factors. Moreover, the case findings showed that Avantor managed to strengthen their attractiveness by providing large letting properties, less costly compared to other areas in city centre, and Avantor were able to be flexible for example in the requirements from their customers to deliver properties for TV-production. Opening cafés and restaurants such as Nydalen Bryggeri, Peppes Pizza and Godt Brød also contributed to create culture in the Nydalen area.

According to the interviews related to the 4 K’s, Avantor actively began looking for new competence companies to establish in Nydalen in the 90s. The new target became IT companies, and they further used the advantage of offering cheaper, larger sized properties with modern construction, making the area attractive for such companies. Avantor in Nydalen became the main competitor of the Fornebu area, which had already got public funds on becoming the IT hub of Greater Oslo. Nydalen were able to outcompete Fornebu during the mid 1990s, due to inflexibility and slow implementations at Fornebu. The largest IT companies, such as Evry were located in Nydalen until 2011. According to the previous CEO, Avantor continued expanding into new industries, focusing on the service and hotel industry. Radisson Blu opened in 2003, at the same time as the Ringen metro station opened.

Avantor further aimed to establish a university level educational institution. This was also due to the metro train arriving from Blindern, the main station for the University of Oslo. According to the previous CEO of Avantor, the motto of this metro line became “Ring-of-Knowledge”, which further extended the arguments

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of establishing an educational institution in Nydalen. BI was a choice and a customer Avantor preferred, because of their strong position in the market. While the suggestion of developing an elementary school was rejected, as these schools require huge playground areas, which Avantor were not able to provide. Avantor sensed that by that time, Nydalen was not mature enough to establish an elementary school.

Summing up, from an historical perspective, the 4K's of Avantor have established the foundation for making Nydalen a highly attractive area. This has contributed to their network capability process by making it more appealing to be present in the Nydalen area. The next part of the findings section will evaluate Avantor's ability to create and sustain network capabilities, structured according to the framework provided in the theory chapter.

#### ***4.3.2 Establish Relationships***

The case of establishing relationships with potential clients, partners and legal bodies observed in Avantor illustrate that this is a very conscious process. Following, we will analyze how Avantor perform this process, and how they work to attract the potential clients. Regarding the client search, the beginning of the process has two opportunities; either, it involves a search from the brokers on behalf of the client, or it is a continuous search in the market from Avantor. Following, Avantor will respond to the broker's requests, or contact the potential firm directly. Finally, a contract proposal will be provided and negotiated, and the process of establishing the relationship with the client ends with a signed contract.

The interviews revealed that the decision of which partners to establish a relationship with is rather complex, as Avantor's operations are not based on one single product line. The company offers products and services in two main areas, that is, city expansion and development based on residential offerings for private housing and being supplier of properties for companies. As Avantor is a small company, they are dependent on external companies and suppliers in order to execute their projects. As mentioned, the main model on the operations of Avantor is built upon only one project leader that create teams by hiring the desired labor and expertise for the specific construction. Their main partners are architectures, contractors from the construction industry, and consultants that help

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provide knowledge on technical matters related to buildings and properties such as electricity, ventilation and maintenance. In this matter, the lawyers who are part of the final contracts are embedded in Avantor's network. They provide guidance in making the contracts well defined, according to Avantor and the clients' demands and expectations. That is, standardized contracts with flexibility.

As previously explained, Avantor is involved in an industry that involves a mutual dependence between property development firms and the governmental institutions. Avantor depends on governmental decisions in their plans of developing Nydalen, while the government depends on Avantor in property development. This implies that *Plan og Bygningsetaten* as well as the city government are important institutions for Avantor, thus it is important to establish relationships with them.

#### *Reputation Building*

The interviews showed that Avantor emphasizes the importance of working proactively towards potential clients. They are concerned of their reputation, as this is their most important feature in attracting new clients. As the CEO explains, Avantor always want to be present at the important arenas for building their reputation. This arena can in example be in the media, promoting Nydalen. Avantor also actively take part in arrangements at educational institutions, such as holding presentations once a year at the Norwegian University of Life Science (NMBU). They desire to maintain a communication with students and take also part at BI events and activities. This is a long-term strategy in order to build relationships with potential future clients, customers, partners and others by involving students to their daily operations. Overall, Avantor continuously establish new relationships through their appearance in different arenas.

Networking towards the clients is challenging, thereby, the main steps Avantor can take to establish relationships, is to market the area of Nydalen and try to adjust how the users perceive Avantor and Nydalen. As Avantor has the strongest control in Nydalen, they are able to show potential customers their portfolio, which are physical buildings they can invite customers to visit. The culture in the company has always been to be as visible as possible, so that all the important actors and clients in the industry know who they are and what they do. An



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example on how they actively pursue this goal is when Avantor invited to an “open day” at their office during the spring 2016. The event provided the audience an opportunity to get to know Avantor, see their office and buildings, as well as it was a good opportunity for Avantor to share their future plans for Nydalen.

As mentioned, the case of establishing relationships with potential clients observed in Avantor involves a search from the brokers. This search is sent out to all potential developers, and all owners of potential buildings with capacity. Avantor emphasize the importance of being on the list of the brokers, so that they receive any relevant search. As one of the project leaders in Avantor reflects: *“We were out of that list one time, at that point we promised ourselves that it would never happen again”*. Thus, the case of Avantor suggest that maintaining a top five, or preferably a top three position, on that list involves a need for establishing relationships with the brokers as well as the client. This relationship is built through years of experience, and a continuous connection with the brokers. This includes updating the brokers on the different plans of Avantor, their portfolio, their vision and the opportunities in Nydalen. Retaining a close contact between the brokers and Avantor is argued to be valuable in order to be involved in the different searches, and further improve the initiation ability of the company.

Some of the key differentiators of Avantor are their experience, and their contacts within the governmental institutions. The case of establishing relationships with the government observed in Avantor, discloses a considered strategy. As it is important for Avantor to be well known by the governmental institutions, the CEO of Avantor highlights that Avantor was clearly involved with the government from day one. This involves a continuous contact, and pro-active work by being visible on the important political arenas. An example of this is when the new city government was elected last fall. Avantor went downtown to the City Hall to invite the main actors for a meeting. In a meeting like this, Avantor will introduce themselves, their vision and plans for Nydalen. By performing this action, they make sure that the new government know their abilities and plans, making sure that there are no surprises at a later point in development of new buildings. However, it is a special case, as Avantor has the benefit of being a central, experienced actor, and thus they are one of the companies invited for meetings at the City Hall.

*Visioning Ability*

Employees at all levels of Avantor have proved to be important in the search process for potential clients. The BI project is an example of this, as Avantor knew that BI's rental contract was expiring they contacted the school, and suggested Nydalen as a possible location as soon as possible. The information of the rental contract was gained from using their network knowledge, by maintaining the contact with individuals in BI. Another example on a different approach is when Avantor recently established a relationship with Elkjøp (Avantor 2016c;f). One of the employees at Avantor discovered the opportunity, simply by reading in the newspaper that Elkjøp were about to move. Avantor acted quickly, and approached Elkjøp with Nydalen as an alternative location. This visioning ability of Avantor is an important factor in establishing relationships with potential clients, and is embedded in the culture of the organization. In maintaining this ability, Avantor works continuously with developing their culture and secure that all employees have the same relationship to Nydalen, that is a collective interest of following the mission of Avantor of making Nydalen a *city in the city*.

*Innovation Expands a Network*

Avantor's goal is to establish a long-term customer relationship and they desire that their customer wish to keep the rental relationship over two periods or more. In order to achieve this, Avantor must deliver what is expected by the customer. This requires a high degree of partner knowledge, and affects the choice of which relationships Avantor wants to establish. Avantor is clear on that they are continuously looking for new partnerships and that they want to create new relations such as with new contractors, consultants and architects for further building projects and expanding of their network. Meaning that, it is not given that the partners they cooperated with previously will be part of their next project. In establishing new partnerships for a particular project, Avantor choose their partners based on the best offer, involving an evaluation of both price and quality. In order to evaluate the quality of potential partners, Avantor may for example arrange competitions, such as an "open architecture competition" that involves participants of wider range that wish to take part and provide drawing drafts and sketches for Avantor's next project. In the latest competition, 75 architects participated in the competition, and Avantor ended up choosing an architect they

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had not worked with before to welcome new ideas to their businesses operations. This activity showed that Avantor have a culture of innovation within their business model. As a result of this competition, the company achieves a greater insight to the market, and expand their network in creating new relationships as well as becoming principals for potential hires of architecture in the future. If Avantor are to decide between 2-3 potential and relevant suppliers, Avantor tend to create price war amongst them in order to get the best offers in terms of quality and price, which is affected by the market. The case study showed that price is an important evaluation factor, as the whole industry itself is quite price sensitive.

#### *Experience Enable Flexibility*

The last step of establishing a relationship is signing the contract. The case observed in Avantor revealed that the company usually operates with standardized rental contracts. However, meeting the demands of the clients is crucial, and Avantor performs a high degree of flexibility at this stage for the right client. The example of BI, indicate that Avantor's willingness to negotiate on BIs premises was an important factor of establishing a relationship with BI. The flexibility and complexity of the sub-deals were reflected by the previous CEO of Avantor, "*Nobody else would have had the opportunity to engage in a deal like this, we had to maintain a high degree of flexibility*". BI had several demands before signing the contract. The sub-deal of the takeover of BI's previous properties was a costly but necessary action from Avantor, as this was a non-negotiable requirement from BI. Further, Avantor proved their flexibility by offering BI an option to buy the building within 2005 (with a yield of 7%), even though it would have been more profitable for Avantor to maintain the rental relationship. This flexibility was, in part, due the cooperative competence Avantor had built through their long experience with contract development.

As Avantor have been in the industry for over 50 years, they have already established some relationships with partners. This involves knowledge on what these companies deliver in form of expertise. The interviews with the CEO of Avantor revealed that the company usually chooses partners they have cooperated with before, using their experiential knowledge that evolves from a trust in these companies. These knowledge and trust factors have been driven from past experiences involving activities between the different suppliers of the industry.

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The case study provided information of that Avantor maintain a high degree of partner knowledge, by already knowing whether they have partners or supplies in their network that will be the best fit for a specific project, based on previous cooperation that have been built through trust and experience. One of the project leaders further described that Avantor has about 5-6 larger contractor companies they tend to prefer when executing a project. This is based on a trustworthy relationship and security levels of knowing that the job will be done according to Avantor's expectations and preferences. Yet, as the previous section implies, Avantor is open for new partners.

#### ***4.3.3 Maintain Relationships***

As Avantor operate the properties that they build, and function as a landlord, they have great advantage, but also a challenge in maintaining the relationships with their customers as well as their cooperative partners. The case of maintaining relationships with clients observed in Avantor concerns their ability to re-sign clients. This implies that after the contract is signed, it is important for Avantor to maintain the relationship through meeting, or even exceeding the expectations of the client. Regarding partners, maintaining the relationship means that the partners want to cooperate with Avantor on a later project. Maintaining the relationships with governmental institutions is considered to be included in planning and meetings arranged by the city government.

#### *Flexibility Fosters Customer Experiences*

The CEO of Avantor describes meeting the clients expectations as crucial in maintaining relationships in the industry Avantor operates in, "*We believe our customers are our best ambassadors- a good customer experience recruit new clients*". Avantor performs a strategy focusing on this aspect, with the advantage of functioning as a city developer of one area. This function involves a control over the area, what the planned activities and projects are, which further leads to an easier interpretation of the client's expectations. However, one of the major concerns in maintaining the relationships is that the clients' expectations might change during the rental relationship, and managing these expectations involves a need for a high degree of flexibility.

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Even though Avantor has several standardized forms of buildings, they have been flexible in the interior design of the buildings. An example of this is when the Norwegian television channel TVNorge decided to locate their head office in Nydalen. TVNorge needed a studio, in order to record programs and TV-shows, and Avantor proved their flexibility by moving from the standardized office building design to a customized office for TVNorge. This developed knowledge of a new design, enabling Avantor to undertake more similar projects in the future. Avantor has further proven to be flexible in other situations by moving companies to buildings with less or more space when needed. This was something the most recent customer Elkjøp stated as one of the qualities that made them choose Avantor.

*“We knew that Avantor is a landlord with a good reputation. The company has a problem solving attitude, as well as a clear philosophy for the further development of the area. Their opportunity to be flexible regarding new office buildings in Nydalen will give us the flexibility we need regarding continuous growth”*, Stein Riibe, Chief of Staff, Elkjøp (Avantor 2016f)

This quotation illustrated that Avantor is known as a problem solving company, with the ability to solve the problems directly as they occur. The BI project provides a good example of this by consisting of several adjustments during the rental relationship. Examples of this are first the building of the (not originally planned) escalator inside of BI, after the school discovered that this would increase BI's ability to handle 10,000 students. Second, Avantor changed “Studentenes Hus” and the campus shopping, after they discovered that this did not work as well as they wanted. This flexibility is valuable in maintaining relationships.

#### *Trust Nourish Relationships*

When maintaining relationships, mutual trust between partners is a key factor. Generally, it was found that two factors influenced the level of trust in the relationships of Avantor. First, Avantor's ability to be trusted by their clients, partners and governmental institutions will affect the harmony in their relationships. Second, the trust Avantor has in their partners will affect their ability to manage their projects in a sufficient way, and thus affect the total level

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of trust experienced in the relationships of Avantor. In order to achieve a sufficient level of trust Avantor has a considerate strategy in developing their relational skills focusing on close, continuous communication.

Interviews with the CEO of Avantor indicate that the organization use several methods in order to be trusted by their partners. The most important in this aspect is the communication methods, revealing a structured communication strategy. As the Nydalen area is under construction; noise from the environment, and an uncertainty related to the final result are challenges for their partnerships. In order to overcome these challenges, Avantor emphasize the importance of communicating the processes of their on-going projects and encourage a close and continuous communication with their tenants, partners and legal institutions. This communication involves information of Avantor's plans and the further process of the building. In the end, delivering as promised is the most important factor in building trust for Avantor.

The organizational structure of Avantor is quite flat, and open communication across the employees is present and easy. Anyone can get in touch with all the employees and also be connected to their costumers, clients and partners. However, the business model of Avantor in relation to communication is built upon if an employee have expertise within one field, this person tend to be charge of the relation and communication maintenance for the relevant and target partner. Again, the terms of trust and security are important in this phase. Though, during the construction of Torgbygget, Avantor has failed in meeting the deadlines. Yet, despite frustrations from their tenants, the company does not see their relationships as damaged due to a well-developed contract and trust. In line with this, Avantor highlights the importance of developing contracts of quality. Specific contracts will further establish a good fundament for the development of partnerships, as the role of each part is clear and there are less room for misunderstandings and distrust between the parts of the agreement. Avantor perceives it as a goal when the partners do not put great efforts or attention to the contract, as this is a sign of a trustworthy relationship.

Avantor further develops a trust in their partners by having a considered selection process. As mentioned in the above section, Avantor choose their partners after a

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number of criteria, making it easier for them to trust the chosen partner, and perform a high level of loyalty in the process. The case study showed that Avantor experienced some difficulties in the BI project, concerning this topic. One of these was related to the architecture hired by Avantor. Even though he had an important and central role in the illustration of the BI building and great honour on the facade of the building, the cooperation between the board members of BI and an artist was challenging. Not respecting neither the requirements nor the budget, Avantor ensured to stay loyal to the architecture and the final result of the BI building have been well received by all parties of the project. By this, Avantor maintained its relationship with their architecture by showing trust, loyalty and taking responsibility for their choice. This affected the level of trust in the relationship, making Avantor achieve a higher degree of network management task execution, encouraging further building of network capabilities. However, an interesting discussion point is if this loyalty could have had a negative effect on their relationship with BI.

The case of maintaining relationships with the governmental institutions observed in Avantor is a further development of the process in the establishment phase. Avantor's main role in maintaining this relationship is to keep track of the building plans of the government, as well as making sure that the government know of Avantor's plans and vision. This involves, as in the establishment phase, visibility at the important political arenas, as well as a close connection to important actors in the governmental institutions. The case of Avantor reveals a mutual dependency with a close, continuous connection between the firm and the institutions, resulting in a more personal relationship. Avantor's advantage in contact with the government is that the company has worked with Nydalen for a long time, so that it is not only single projects they work on. Individuals and their personal and social skills are also important in this aspect. The city government should know the leadership at Avantor in person. The BI deal is an example of how important this is. The CEO of Avantor at this time had worked a lot with and in the government before, and the maintenance of this relationship (keeping contact) is likely to have had an effect on how fast the regulation plans for Nydalen were. However, this is difficult to measure.

### *Project Management Skills*

The skills of managing projects, including coordination skills, planning skills and organizing skills contribute to the completion of the projects in PBOs. Avantor emphasize that they always have a clear timetable and plan of all building projects. This plan is introduced and given to the partners in the beginning of the project, and it function as a tool for structure in the project. In order to secure this time- and progress plan, Avantor arrange meetings with their partners during the process to make sure that the plan is followed, and that all participants know what to do, and when their part should be done. By securing a well-organized project, Avantor further develops their network capabilities. The interview with the operations manager further discloses that Avantor is concerned of the working environment for their partners. In order to secure the environment for their partners, Avantor involves in having a clean, safe and stable work environment for the partners involved. This is much appreciated and might be one of the factors making partners join a project of Avantor again, and thus maintain the relationship.

#### ***4.3.4 Learn from Relationships***

Following the structure of the framework provided, the last step of creating and sustaining network capabilities involves learning from the network and the relationships in which the company is embedded. The learning in Avantor usually takes place in two different ways. Either, during project completion, or at the evaluation meetings after the building processes are finalized. Interviews showed that learning is continuous for Avantor since they are part of the A-Z process of their projects and product delivery. Moreover, Avantor has an advantage of learning due to on-going projects on daily basis. The learning is derived from the operations, routines and feedbacks from their peers, customers, clients and partners as well as the internal communication within the organization. After a client's takeover a building, the operation managers of Avantor continuously provide feedback to the management of Avantor regarding the maintenance of the building. They provide knowledge about the building and evaluate the quality of the building project. Avantor has established routines from the feedback of what products they have used are good or not. From these feedbacks Avantor learns what areas of their construction have been of quality and what has not, which later provide the opportunity to choose partners based on quality for the next projects.



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This involves a need for accuracy in the performance of the building projects as Avantor will operate and be involved in a relationship with the tenants long after the building process is completed, same with the partners of their network. The process can be everything from constructing a building, transforming it or tear it down. The main routine after the construction of a building, the project is handed over from being managed by the project leader to the operation department of Avantor.

The routines within Avantor are developed through milestone meetings, when they have reached a specific phase on the process a meeting with all parties involved is encouraged. In order to learn from past projects, an embedded routine is to evaluate of “what went well and what did not go well”. Avantor emphasizes the importance of focus on the positive aspects and learn from this as well, however they acknowledge that they are best at commenting the negative aspects of the project. The external consultants, architectures and partners who were part of the project are also present at these meetings, providing valuable input to the evaluation. Further, the internal meeting structure is derived from weekly meetings at each department where the department leaders lead the meetings with their groups. Once a month they have joint meeting with the whole organizations and board meetings in regular basis. The meetings are lead through environment strategy where the goal is to make all employees updated, so all employees are aligned. If there are questions asked from external parties, each member of Avantor have learned to answer the questions in the same way, and with the same history of how they collectively came to the conclusion of the decision that have been made. The meetings vary from half day seminars or whole days, depending on the size of the projects and what the expectations of the outcomes are. Avantor try to do the same debriefing of what went well in a project. By this, Avantor are able to define the success factors of their project and learn from them. In example, they noticed that a restaurant like Bølgen og Moi was not fit for a place like Nydalen, the same goes for a concert arena like “Studentenes Hus”.

#### ***4.3.5 Summary***

In this chapter we have reported on the findings from the study, and analyzed the data in relation to the framework developed from theory. The process of creating and sustaining network capabilities in Avantor begins with the foundation of the

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4K strategy of city development, as these are essential for Avantor's vision of building a *city in the city*. Communication, competence, culture and knowledge are the founding elements to make Nydalen an attractive area. Structuring the findings from the case study of Avantor according to the summarized theoretical framework is used to view the process of the creation and sustainability of network capabilities in a real life case.

Firstly, the process observed in Avantor highlights visioning ability, reputation building, innovation and flexibility as the main activities in order to establish a relationship. This involves strategies focusing on constant network creation through open days and presentations at universities. Moreover, arranging competitions to discover new partners, contributes to the innovation in Avantor. Contract signing through flexible negotiations is also an important factor in establishing new relationships. Secondly, by maintaining their relationships, Avantor further strengthen the creation and sustainability process of network capabilities. The most central factors in this aspect observed in the case concerns flexibility, trust building and the project management skills of Avantor. The ability to offer problem-solving solutions and adapt to the changing requirements from the clients is linked to flexibility. Mutual trust is gained through delivering product and services as expected and agreed on from both, Avantor and their partners. Project management skills concerns Avantor's ability to accomplish their projects in an effective and efficient manner in a safe environment. Close communication with the governmental bodies was also found to be important for Avantor, as the city government regulates the building processes in Oslo. Lastly, the case provided information of the learning and meeting routines established in the organization. Learning and knowledge is exploited through debriefing and sum ups in meetings in the beginning, during and after projects, enabling Avantor to create and sustain network capabilities. These findings provided a base for discussing the theoretical framework with a real life event, including new insights that may contribute to theory development.

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## 5. Discussion

In this chapter, the summarized theoretical framework will be discussed along with the aforementioned findings of network capability creation and sustainability in Avantor, with the aim of theory development. The discussion will point out the fits between the theory and the empirical world and provide new insights to the phenomenon of network capabilities. The first part will discuss the network capability creation process, within the three stages of: establish relationships, maintain relationships and learn from relationships as a foundation. Secondly, it will be discussed how Avantor sustain their network capabilities, by using the iterative process feeding between project- and organization level as a base. Additionally, the dynamic aspect of to sustain network capabilities will be discussed. Finally, the section will contribute in answering the research question: “How do project-based organizations create and sustain network capabilities?”

### 5.1 The Network Capabilities Creation Process

The theoretical framework suggest that when a company create network capabilities in a project setting, the capability is developed through three stages within the project, but it is not embedded in the firm before the learning takes place at the organizational level. Furthermore this part of the discussion will evaluate the three stages in the cycle of network capability development and it will be discussed how the findings may contribute in theory development.

#### 5.1.1 *Establish Relationships*

In establishing relationships, the theoretical framework highlights confidence in networks as a system, visioning ability, cooperative competence and personal skills as the most important factors (Äyväri and Jyrämä 2007). While the case study observed in Avantor suggests that visioning ability, reputation building, innovation and flexibility are the most important factors in their establishment phase. This implies that the interviews of employees at Avantor comply with the previous studies on this field, however there are several new insights that may contribute to the theory development.

The clients Avantor establish a relationship with might be considered a part of their strategic network, as this is a relationship where both parts want to increase their competitive advantage by establish a partnership (Jarillo 1998). For the

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client, this is related to their office attractiveness, a possible lower cost of renting offices and the functionality of the office building. For Avantor, the choice of clients is related to the established 4Ks that contribute to the overall strategy of Avantor. The company also aims to establish a cluster effect, making more companies interested in the Nydalen area. Further, Avantor is also a part of an industrial network, defined by how the business relationships form networks, rather than how the organization can form their own network (Gadde et al. 2003). One of the most important actors in this network is the government, providing building plans and regulations. Avantor has experienced several challenges regarding this relationship. Yet, there have also been positive outcomes, in example with the decision of construction Ringen metro line. Further, the partners participating in the projects might be seen as a part of the industrial network Avantor is embedded in. However, the findings suggest that there are also strategic motivations for choosing the specific actors to participate in each project.

In order to complete their projects, Avantor has no choice but to be embedded in a network, and thus they *must* have confidence in networks as a system. This is consistent with the argument of Äyväri and Jyrämä (2007), stating that confidence in networks as a system, is an important foundation for success in creating network capabilities. As Avantor usually dedicate one project leader for each project, they are dependent on their network to assist them in performing complex projects. Having confidence in networks as a system is consequently important for successful projects. The previous theory argues that this confidence is developed through experience (Äyväri and Jyrämä 2007). This is reflected in the case by evaluating Avantor's choice of partners, which is often based on previous experience, and experiential knowledge. The contradicting finding in this aspect is Avantor's willingness to use partners they have never used before, making the argument of innovation and renewal ability relevant, further strengthening the argument of confidence in networks as a system. Dubois and Gadde (2002a) argued that firms suffer from low productivity and innovation due to the lack of tight couplings in the permanent network and the uniform focus on tight couplings in the temporary network. However, the case study showed that Avantor manage the balance between loose and tight coupling by taking advantage of both, new and the established relationships derived from Avantor's confidence and

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reputation in the network. Avantor may choose among several partners from their network, which again leads to an innovation opportunity for the company.

The establishment of relationships in creating a network, and thus network capabilities relies a lot on the management of the firm. *The visioning ability* of a firm (Möller and Halinen 1999) is related to the management's ability to develop the right networks, and see potential networks. In the case of Avantor, the process of developing a visioning ability is described as a more continuous, throughout process than what is argued in previous research, meaning that Avantor has invested a lot of resources in developing this ability. The previously described 4K's outlines a strategy for the visioning ability, and these K's affect how Avantor see potential networks, and partners. The finding of the 4K's is further consistent with previous research arguing that an ability to identify partners (Lambe et al. 2002) is crucial when developing a network and thus network capabilities. The interviews reveal that the ability to actively search for these partners and find suitable partners for the specific project is highly valued in Avantor. The examples of both BI and Elkjøp prove Avantor's ability to be active in their search, and always look for suitable opportunities, thus developing a contact seeking ability (Äyväri and Jyrämä 2007), leading to network capabilities.

After finding and engaging in suitable partners, the Avantor case suggests that their ability to negotiate contracts is crucial in establishing relationships. This involves, as described in the theory section, the cooperative competence of the firm (Möller 2007). The findings from the case of Avantor suggest, that at this stage, it will be important to cooperate with the other part, and find solutions which are suitable for both (all) partners. This involves among other things the opportunity for flexibility, the importance of trust and negotiating skills needed to adjust mutuality (Siwadas and Dwyer 2000). The findings of the case implied that this is the point where Avantor had the most skills and where they encouraged the most effort. Their ability to be flexible proved to be the most central ability in writing contracts, especially in the example project of BI. Avantor's advantage of long experience and financial strength contributed to their ability to be flexible, making them a preferable partner for more companies. Following, it is reason to believe that this advantage is important in the success of creating network capabilities, and might be more central to the framework than what is described in

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theory. In addition to experience and financial strength, the need for personnel- and social skills were important factors according to the case. In the example project of BI, this was of high relevance, as some individual employees of Avantor had a large role in the negotiating phase, resulting in contracts of quality and several specifications.

The findings of establishing relationships in Avantor indicate that there are differences regarding which partnerships they want to form. Avantor varies a lot in their methods of establishing relationships, depending on which partners (brokers, tenants, contractors etc.) they want to connect with. This indicates that the establishment phase might be more partner-specific than what is explained in previous research, and it might not follow the same path depending on which relationship they want to establish. This involves a process of gaining knowledge of potential partners as more important than what is presented in theory. Further, the case of Avantor showed that the visibility of a firm is also a point much embraced by Avantor. Being present in the market, and visible at the important arenas, in which potential partners participate, is a focus area in establishing relationships as well as it contribute in gaining a network overview (Holmen and Pedersen 2003). The visibility of Avantor contributes in making Nydalen an attractive area, as well as it is making Avantor a “top of mind” company, attracting potential partners. Thereby, the visibility of the firm should be considered as an addition to the theoretical foundation. Experience is also important in the establishment phase, both in trust, flexibility and other factors to adjust mutuality, making the argument of an iterative process of developing network capabilities highly relevant. An explanation of this will follow in the second part of this chapter. The theme of flexibility is a central part of the establishment phase, and more study on this field might contribute in tightening the gaps in theory.

### ***5.1.2 Maintain Relationships***

In maintaining the relationship with the established partner, the development phase of network capabilities highlights a need for collaboration capabilities, project management skills and social skills as the most important (Walter 1999; Äyväri and Jyrämä 2007). The case provided insight on the need for these skills and capabilities, and therefore trust and flexibility are relevant elements to

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consider in the maintenance of relationships and may contribute to theory development. Furthermore, the case indicates that Avantor has an advantage of controlling their projects in this aspect, by participating from A-Z. As Avantor operates the properties they build, and function as a landlord, the company has a great advantage, but also a challenge in maintaining the relationship with their customers as well as their cooperative partners, as this is a close relationship throughout the rental period. The findings in the case indicate that there are partner specific differences on how Avantor maintain their networks, relating to their overall aim of attracting customers for a second rental period. This is not reflected in previous theory as illustrated in the framework and should be considered as an addition.

In developing network capabilities, maintaining the established relationships are important, and there is a high need for collaboration capabilities (Ritter 1999; Äyväre and Jyrämä 2007). Avantor encourages a commitment and trustful relationships between themselves and their partners. This is consistent to previous research, stating that in a project setting, an ability to pull resources and routines in a time efficient way is crucial in order to create joint alliance competence (Möller 2007). The collaboration capability of Avantor is illustrated in the case by the way Avantor manage their building projects. Avantor emphasizes the importance of a good working environment for their partners, resulting in effective work, delivering a good result on time, and thus joint alliance competence.

The Avantor case further shows that project management skills are fundamental, as Avantor usually only has one project manager at each project in which they engage in. Avantor maintains this competence and experiences from their previous projects. Interviews reveal that by having an overall goal for the area, Avantor highlights the importance of a clear strategy and project management skills, making them able to link their practices to strategic goals. This strategy and skills have been developed through time, and the findings from the case are in line with the argument of Killen et al. (2012), stating that project management itself needs a high level of maturity in order to provide competitive advantage.

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The framework suggests that the relationship between individuals in the firm is of importance, and the social skills (Walter 1999) of the employees are important to maintain a profitable relationship. The most important social and relational skills concerns around building trust, having good communication skills and being an active partner in the network (Möller and Törrönen 2003; Walter et al. 2006). The case of Avantor suggests that the social and relational skills used in maintaining their relationships are most important in the communication aspect. As Nydalen is in progress of turning into a *city in the city*, communication of all plans and developments are important and trustworthy behavior. One might believe that Avantor would have had difficulties in keeping their tenants over more periods, unless they used this communication abilities to inform their network of the time aspect of their further plans. As the area is under construction, keeping their promises regarding what the area will look like has in addition been discussed to be important in maintaining relationships with tenants, as argued by previous research (Whitenere et al. 1998). These communication methods have also been valuable in maintaining the relationship with the government.

The findings of the case show that maintaining a relationship for Avantor, as a landlord through a client perspective would be a renewal or an extension of a rental agreement. While on the supplier's side, maintaining relationships would be to ensure that partners wish to work with Avantor again on next projects and maintain close communication with their network. As it is many competitors within the industry, the focus must be on how to keep the area attractive for the tenants. This means that in all partnerships Avantor engage in, the company tries to maintain a high degree of flexibility. This is in order to follow up demands, and keep their tenants pleased at all times with close cooperation with the partners, hopefully resulting in an extended contract. What differs from most other developers in the industry is that Avantor controls the majority of the Nydalen area, and by this, the company is entitled to be more flexible than other similar companies. This has proven to be a great advantage for Avantor. The case discloses how Avantor has the opportunity to be flexible regarding both space and supplements to their office buildings, suggesting that both experience and financial strength are important in this aspect. Avantor has built this strength through successful projects in the past, enabled by their financially strong owner. Including the flexibility aspect in the theory of the creation phase of network



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capabilities would be of relevance, however one must consider if only experience and financially strong owners govern this flexibility, or if it is possible to achieve such flexibility excluding these advantages.

### ***5.1.3 Learning from Relationships***

According to the theoretical framework, network capabilities are embedded in the company after the evaluation and learning process of the project takes place. The case of Avantor illustrates this by emphasizing the need for evaluation meetings and the importance of the balance between exploitative- and explorative learning, making use of the experience the company receive. This is consistent with the argument of Brady and Davies (2004), stating that both explorative learning and exploitative learning are important in learning through projects. The case study of Avantor further illustrates their ability to learn and use their experiences. The company is a part of ongoing projects on daily basis, with different requirements and demands from each project. The company is able to use past experiences to cope with new projects and follow the same procedures and activities. Though, they have created network capabilities within the organization, which they can now use to execute their future projects. This is also in accordance with the previous theory, hence that a firm that is able to use their experiences in the right matter will be able to create new network capabilities.

In addition to this, the case shows that internal communication and evaluation are important in the learning process. The learning from a project in Avantor is derived from the operations, routines and feedbacks from their peers, customers, clients and partners as well as the internal communication within the organization. Avantor has consistent routines of having several meetings for evaluating the project, and learn from it. This learning further leads to having the network capabilities embedded in the organization. However, in the case of Avantor, the process does not have an end. The internal communication will continue, as the project still is in the hands of Avantor. This can be, in example, a situation where Avantor have used material that is not suited for a specific type of building, rearranging this usage the next time. Meaning that internal communication might be more central to the creation and sustainability of network capabilities.

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## **5.2 How to Sustain Network Capabilities**

The summarized framework argues that network capabilities created in a project setting are sustained through an iterative process. This implies that the experiences and capabilities are nourished from the organizational level to the project level, and back from the project level to the organizational level. Generally, it was found that both project capabilities and organizational capabilities influenced the sustainability of network capabilities in Avantor. However, the dynamic aspect of the framework was found to be the most important capabilities in the sustainability of network capabilities, highlighting flexibility as a critical factor. This section is divided into two parts, first evaluating if the iterative process takes place in the case of Avantor, and second evaluating the importance of dynamic capabilities in the sustaining of network capabilities.

### ***5.2.1 The Iterative Process in Avantor***

The complex project setting Avantor operates in is based on inter-organizational relations and network management. Through their network, Avantor has involved organizations, contractors, architects, politicians and more in order to meet the right skills and expertise to outperform the different projects. The construction of the BI building was used as an example to get the picture of how Avantor handled their customers, as part of the development of Nydalen. This project is considered to be the most complex of them all due to the challenges and risks related to its size, uncertainty, schedule urgency and institutional process (Flyveberg et al. 2003; Davies and Mackenzie 2014) as well as the competition from different regional areas that was also fighting to become BI's location. The findings from the interviews showed the complexities the BI project brought and how Avantor handled their project implementation, integration and processes. These findings strengthened the argument of that network capabilities are sustained through an iterative process, especially considering the argument of the learning loop between the organizational level and the project level.

According to theory, firms are dependent on a high quality organizational capability base in order to sustain network capabilities. Organizational capabilities are the firm-specific knowledge and skills developed by learning through trial and error, feedback and evaluation (Chandler 1990). As mentioned in the findings

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section, Avantor is concerned of keeping their employees and network updated through meetings on weekly and monthly basis. This provides the evidence of that Avantor have developed and maintained organizational capabilities, and use these in their projects. The level of coordination and internal communication due to their flat organizational structure creates the transparency of learning from their operations, which is in accordance with the arguments from the theoretical framework on the iterative process, and that the communication (Kale et al. 2005) and constant interaction provides a learning loop between the organizational level and the project level. Another argument of organizational capabilities linked to their flat organizational structure is that it opens up for dialogues of the day-to-day operations between the employees. This communication capability makes sure that constant feedback of the project is provided to the organizational level of the organization. Knowledge is derived from the sum up meetings after one project is finished, and the top managements are involved and lead the meetings that have become a routine within Avantor's operations. This encourages the debriefing and evaluations of project executed and give the basis of a deeper understanding and organizational knowledge so new organizational capabilities such as network capabilities are created and sustained. As argued by Chandler (1990), organizational capabilities may lead to competitive advantage as this provide companies to move down their learning curve faster than their competitors. With the constant feedback and evaluation of the Nydalen area, Avantor maintain the most knowledge on this specific area, and accordingly, their strong presence with established relationships, provide Avantor with a competitive advantage in Nydalen. Due to their control and organizational capabilities this will provide an advantageous foundation for sustaining network capabilities.

The processes observed in the case of Avantor showed that capabilities created at the organizational level again feed back to the project level. As Avantor is a private-owned company, there is no room for delays, as this will ruin their relation to their clients if they do not deliver by the time a project is to be done and within the budgets. Again, the BI project has been used as an example of this, as the building needed to be finished by school-start in August 2005. Thereby, van Marrewijk et al. (2008) argument of that in complex projects the budget tends to overrun and not to meet the time schedule is not evident for Avantor. Their ability to be on schedule and to successfully perform their projects is related to their

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organizational structure and project management skills, thus project capabilities (Davies and Brady 2000).

As mentioned in the theory section, Davies and Brady (2000) introduced the concept of project capabilities, which are regarded as the third way of necessary capabilities for firms to perform in turbulent environments to establish, coordinate and execute projects (Melkonian and Picq 2011; Davies and Brady 2015). In a historical perspective, the turbulent factors of Nydalen are related to the lack of public transportation and distance from the rest of Oslo and that most people perceived Nydalen as a suburban area. In addition, Avantor met strong competition from other areas such as Fornebu. Being a PBO, Avantor has been especially dependent on developing project capabilities in order to succeed in their industry. As described in the findings section, Avantor adjust the participants of their project according to the different requirements and the relevant expertise that is required in order to execute a specific project. This is consistent with the bottom-up and top-down model in order to gain learning (Morris 2013), which again results in developing project capabilities. Meetings are arranged when different milestones are reached which consist of feedback that again provide insight information and learning to all partners involved. At the bottom-up side, Avantor have established structure on routines on how to chose project leaders who is a match for the specific project. This can be related to that the project leader has its own network or strong relationship to a key person who have the relevant resources and to get the right expertise. The success of the projects of Avantor is influenced by the variables discussed in the theory that firms with the ability to develop project capabilities such as coordination capabilities will contribute in both the development and sustainability of network capabilities increasing its performance.

As for Avantor, they are dependent on creating standardized contracts in order to create control in their projects, however this may affect the culture within a project. Following van Marrewijk et al. (2008) argument that the cultures within megaprojects tend to be vague as there are many collaborators but no single centre of calculation and control. Again, the internal coordination and communication as well as the flat organizational structure are powerful means to create a collective culture within the network of Avantor and their complex project. This also affects

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their opportunity to use capabilities created within the organization in their projects, making the argument of an iterative process relevant for this case.

### ***5.2.2 Dynamic Capabilities Sustaining Network Capabilities***

As this thesis evaluate Avantor through a project setting, the discussion of their dynamic capabilities is relevant in order to reveal the sustainability of their network capabilities. In sustaining network capabilities, the theory suggests that companies are embedded in an iterative process, and that within this process, companies develop dynamic capabilities, by a three-staged process. Dynamic capabilities involve adaptation and change, because they build, integrate or reconfigure other resources and capabilities (Helfat and Petraf 2003). Meaning that in this context, these capabilities are used to improve and change the network capabilities of a company when needed, making them important in the sustainment process of network capabilities.

The network capabilities developed through the process described, are dependent on a continuously adjustment to the environment in a long-term perspective. This means that Avantor must adjust their network capabilities to the environment, making them useful in new relations. This flexibility is shown in example in building new commercial buildings, where the findings suggest that Avantor has a high level of flexibility, which provide the ability to adapt and change according to the environment and requirements from their clients. This is consistent with Teece et al. (1997) arguing that dynamic capabilities are important in turbulent environments. The flexibility also adds to the theory in making Avantor an attractive landlord and thus sustains their network capabilities. Further, a more concrete example of this flexibility is how Avantor where able to meet BI's requirements for re-locating to Nydalen. The findings reveal that BI had several demands before signing the contract that was built upon gathering BIs departments. There were a lot of uncertainty concerning the deal, much due to banks being skeptical to provide loans to a project with high level of complexity, made the process even more demanding for both BI and Avantor. In addition, there was not given that Nydalen will become an attractive area and thereby one may look at the deal as gambling. Avantor successfully managed to deliver the building BI wanted and showed that they are able to build something they have not done before, this was managed by strong project management, partner

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selection and flexibility. The BI project may accordingly be used as an evidence to prove Avantor's dynamic capabilities, and how these create competitive advantage.

The framework further suggests that, in projects, companies develop dynamic capabilities through the three-staged process introduced by Helfat and Peteraf (2003), in order to sustain and improve their network capabilities. The case observed in Avantor suggested that Avantor focus on developing dynamic capabilities in order to improve their capabilities, making the network capabilities work in the specific situation they are involved in. Avantor has additionally proven their ability to develop dynamic capabilities through their innovation and renewal ability. In selecting partners, Avantor must adjust and seize the opportunities in the external environment in order to gain competitive advantage. By combining their resources with other firms, Avantor will create both dynamic capabilities (change, adjust etc.) and new network capabilities (partner knowledge, coordination capability) by starting the process of establishing a new relationship. The findings from this case specify that firms should focus on dynamic capabilities in order to sustain and even improve network capabilities as highlighted in the theoretical framework.

### ***5.2.3 Main issues Contributing to the Strategizing in Networks***

Finally, the main issues discussed above contribute to the theory concerning the strategizing in a network business context. As presented in the explanation of the framework in chapter 3, the development of dynamic capabilities will also affect the strategizing of firms in networks. The findings in chapter 4 illustrate that Avantor attempts to find the right balance of involvement with the individual partners, implying partner specific evaluations, in order to achieve the benefits of their network. In solving the paradoxes (Håkansson and Ford 2002), Avantor use their dynamic capabilities to enable flexibility by balancing between influencing and being influenced. The BI example provides a good illustration of this. As Avantor had to adjust to the requirements from BI, but at the same time influence the decisions as this had an excessive implication for the further development of the Nydalen area. Further, to avoid too much control of the network, as the third paradox highlights (Håkansson and Ford 2002), Avantor allows innovation by arranging competitions and inviting new partners to collaboration. This allows for

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innovation and a desired level of control, contributing to sustaining and improving network capabilities. The initiative by Avantor on competition also provide a network overview (Holmen and Pedersen 2003) as Avantor gain insight to new relevant actors from their surrounding network, thus mapping it, and strategize towards establish new relations and influence their own network horizons.

Studying the affect on performance is out of scope for this thesis, though the implications on performance of network capabilities should be mentioned. One may argue that the project success in Nydalen area is an implication of Avantor's ability to create and sustain network capabilities, which also affect the company's performance. As Ritter (1999) argued, companies should invest in network capabilities as this may be seen as a core competence and the firm may achieve competitive advantage. Strategizing with its network has provided Avantor with project success in the Nydalen area followed by a high quality portfolio for the company improving their performance. Avantor is constantly moving towards reaching their mission of developing a *city in the city*, and their project success also leads to high revenues for the company and a stronger position in Nydalen area. Through their networking strategies Avantor possess a broad selection of several actors, partners and a strong reputation within the industry, attracting businesses, tenants and educational institutions to the Nydalen area. Avantor's ability to establish, maintain and learn from its relationships follows a dynamic process, which also enhances innovation due to the fact that Avantor proactively, seeks for new partners for their projects. Learning through the various projects improves their coordination and implementation, leading to efficiency within the network, and further might affect their performance at the organizational level.

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## 6. Conclusion

It is becoming increasingly common for companies to engage in inter-organizational relations to develop a competitive advantage by combining resources and achieve joint outcomes (Brass et al. 2004). Consequently, companies today are operating in a network business context. PBOs are typically operating in networks to complete their projects (Pitsi et al. 2003), and therefore depend on network capabilities. Subsequently, this thesis is built on the research question: “How do project-based organizations create and sustain network capabilities?” The research question was based on the theoretical gaps concerning creation and sustainability of network capabilities (Äyväri and Möller 2008), as well as the issues of organizational and managerial capabilities in complex projects (van Marrewijk et al. 2008; Davies and Mackenzie 2014). After reviewing the literature, we identified a framework of the network capability creation and sustainability, based on previous studies. This theoretical framework was further used in evaluating the network capability creation process and the sustainability of network capabilities observed in the property development company, Avantor. Following, the key findings and main contributions from this study will be presented.

### 6.1 Key Findings

The case study of Avantor provided new insights of the theoretical arguments concerning network capabilities, developed in the theory chapter. The network capability creation process in Avantor complies to a large extent with previous literature. The process of creating and sustaining network capabilities proves to be an iterative process, illustrating the importance of dynamic capabilities to sustain the created network capabilities. However, the findings of the study suggest some important factors, which contribute to further developing the theoretical foundation on network capabilities.

#### *The Creation Process of Network Capabilities*

The creation of network capabilities involves three processes, establishing, maintaining and learning from relationships. The main findings of establishing relationships in Avantor highlighted reputation building, visioning ability, experience and innovation as some of the most important factors. This is consistent with parts of the theoretical foundation. However, there are three



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possible adjustments, and thus contributions in the development of theory. First, while the theoretical foundation suggests that organizations rely on previous experience to choose their partners, the empirical study of Avantor disclosed that in this case, engaging in new partners were an important ability in expanding and renew the network of the organization. However, the process of handling relationships in Avantor revealed partner specific differences, meaning that the processes will not be uniform, but might change from partner to partner. This adds to the theory by identifying a new ability in establishing relationships, which concerns balancing between engaging in new relationships, and existing relationships, as well as handling these partners in a suitable way. The second possible development is the visibility ability Avantor possesses. The ability of being seen at important arenas, contributing to reputation building, was one of the most central findings in the process of establishing relationships in Avantor. This ability has not been discussed in previous literature on network capabilities, and could be considered an important addition to our understanding of which abilities are important in the establishment of relationships. The third development evolving from studying the case of Avantor is the importance of negotiation skills and flexibility in the contract signing. This is an important base for establishing a relationship based on trust, and might contribute in understanding how firms create network capabilities.

The findings of maintaining relationships in Avantor highlighted flexibility, trust, project management skills as the most important factors. These findings might develop the theoretical base in terms of focusing more on factors in the subcategory of the maintenance phase. Primarily, the opportunity to be flexible in providing new office buildings in Nydalen created a huge advantage for Avantor in maintaining their relationships. Their opportunities of moving companies to different locations in the same area, as well as their opportunity to produce company specific requirements in their projects, often resulted in extended contracts. Thus, the flexibility aspect of creating network capabilities is an important development of theory. However, the risk of adding this factor is the influences of the other attributes of Avantor, including their financial strength and experience in the industry.

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The findings of learning from relationships in Avantor highlighted learning and internal communication as the most important factors. This contributes to the theoretical foundation, by describing a stronger focus on internal routines and meeting processes than what was previously described in theory. The routines of meetings and learning process of Avantor was a key capability in creating network capabilities, and thus an evaluation of routines might be included as a point under the learning aspect. However, this should be specified in the creation process, in order to frame the importance of it.

### *Sustainability of Network Capabilities*

According to previous literature, as illustrated in the framework, network capabilities are sustained through an iterative process, where projects feed to the organization, and vice versa. This process was also evident in the case of Avantor. Looking at how they used their organizational capabilities in managing their projects, illustrated the learning loop between the projects and the organization. In further sustaining and improving network capabilities, the theoretical framework suggested that dynamic capabilities are a central factor, enabling the firms to use their developed network capabilities in specific processes. The findings from the case of Avantor suggested that the organization constantly develops dynamic capabilities to improve their network capabilities, making them sustain in the organization and adjusting them to fit the specific situation, contributing to the balance of strategizing in networks. For example, in solving the strategizing paradox of influence (Håkansson and Ford 2002) in the BI project, Avantor developed dynamic capabilities to use their network capability in this specific setting, focusing on flexibility. As BI had several requirements for the deal, Avantor had to maintain the right influence, in order to also achieve the benefits they demanded from the deal.

## **6.2 Managerial Implications**

As previously mentioned, businesses are embedded in a network context. In this matter, managers should have a strategic focus on how to achieve the advantages a network might bring, as well as avoiding the potential challenges related to this setting. This thesis provides insights into how network capabilities are a possible response to handling these networks in the case of Avantor. This implies that the thesis contributes in highlighting the importance of managers' awareness of

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network capabilities, as well as how they are and can be created and sustained. These capabilities should not be ignored, but rather be created and sustained continuously within the organization. Furthermore, the thesis contributes to managers' knowledge of network capabilities, and how to create and sustain these kinds of capabilities in a PBO. Using the extended information of how the network capability creation process functions through establishing, maintaining and learning from relationships will assist managers to focus on important issues in this aspect. The most important contributions of these being the focus on communication, flexibility and visibility, that will enable firms to consciously create and sustain network capabilities in their organization.

This thesis also provides insight into how important network capabilities are for the accomplishments of projects involving multiple parties. Moreover, this thesis provides managers insight into some of the routines and systems Avantor perform in order to manage networks through network capabilities. However, it also sheds light on the importance of flexibility in this aspect. Meaning that managers should note the importance of flexibility in maintaining relationships with their partners. Additionally, this thesis provides critical insights on how PBO can sustain their network capabilities through the development of dynamic capabilities and the learning loop between the organization and projects. The findings from the case of Avantor suggest that managers should focus on developing dynamic capabilities in order to improve and sustain their network capabilities. It should also be noted that focusing on the interaction, internal communication and feedback, between the projects and the organization are important factors in the sustainability of network capabilities.

### **6.3 Limitations**

There is an inherent limitation of single case studies in terms of generalizability. This is present in this study meaning that the study cannot automatically be generalized to other companies. One of the limitations in this aspect is that Avantor operates in a specific, domestic industry, and influenced by a wide array of contextual and company-specific factors. Avantor is a special case of firms in this industry as it is an experienced company with strong financial muscles. This also represents a limitation to the study in terms of evaluating if these factors are prerequisites for the findings. However, the goal of the thesis is not statistical

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generalizability, but further development of theory regarding network capabilities. By using the methods of systematic combination, where theoretical and empirical observations are combined (Dubois and Gadde, 2002b), the study sheds light on the phenomenon, and provides insights other, similar firms may use in their creation and sustainability of network capabilities. The lessons to be learned from this thesis is achieved through analytical generalization, making it possible to use the findings as a pointing mark for further similar situations.

The framework used as a base for the analysis of this thesis might also appear as a limitation to the study. It is argued that researchers often lock themselves to the framework, and does not see other solutions than the original one (Dubois & Gadde, 2002b). However, in the analysis of this thesis, the focus was not to test the framework, but rather develop the theoretical foundation on network capabilities.

A challenge and limit of qualitative research with semi-structured interviews is that it reflects personal opinions and biases may occur due to reflexivity (Bryman and Bell 2011). In this aspect, the secondary data was very valuable in confirming some of the important aspects of the study. It was also valuable to perform several interviews with the same focus, confirming the opinions of the participants. Furthermore, a limitation of the interviews might be that flexibility during the interviews might result in a different focus of the interview than what was intended. To avoid this limitation, we aimed to have a well-developed structure of the interview guide, so that the important topics were discussed. Additionally, regarding the interview methods, a limitation to the study is that all the interview objects used in the thesis are men. This might provide a different view of the case than if woman would have been included as interview objects. Yet, the study was evaluated to interview the most central and knowledgeable actors regarding the thesis topic.

#### **6.4 Further Research**

Overall, the case study of Avantor revealed partner specific differences in how the relationships were handled, and thus how network capabilities were created and sustained. This is an interesting point for further research, as it might provide further implications on how firms should act in relation to a specific partner.

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As outlined in the key findings section, more research on the flexibility aspect of network capabilities is necessary in order to evaluate if this ability is possible to maintain when excluding the financial state and experience of Avantor. A further study of this would be to study the performance effect of network capabilities. Even though this was out of the scope for this research, the study showed that the creation and sustainability of network capabilities might have implications on a firm's performance, and thus this would be an interesting topic for further studies in developing the theory of network capabilities.

In this thesis, we studied a PBO in a specific industry. Accordingly, other PBO industries could be interesting to increase the knowledge on the temporary versus the permanent in creating and sustaining network capabilities. In addition, there are few studies of this phenomenon in general, and a comparison between PBOs and other types of industries could be interesting for further studies. Following, studying other industries might supplement the theoretical foundation on how important innovation ability is in the process, by for example studying the network capabilities of the IT-industry where innovation is present. Additionally, it might be valuable to study the same context in an international aspect, as this would suggest if this scenario is specific for the Norwegian industry. Further study on these subjects might enhance the opportunity of the framework to become generalizable. A second suggestion for further generalization of the research is to test the framework in order to create a refined framework or confirm the framework provided in this thesis. This will have the opportunity to support or contradict the provided framework for creating and sustaining network capabilities.

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## 8. Exhibits

### Exhibit 1: Interview Guide Avantor AS

This interview guide is developed according to the literature and the theoretical framework developed on the topics of network theory, strategizing in networks, complex projects, and network capabilities. The interviews are of a semi-structured approach that involves flexibility to ask follow-up questions when it is relevant and are not included in this interview guide. The interview is divided into three parts.

**Respondent:** Avantor AS

**Interviewers:** Tahiya Hussain and Ine Reinemo

**Goals of the interview:** Define how Avantor perform their multiple projects. Get insight in what the most important attributes in the relationships are, and how Avantor *establish* relationships, how they *choose new-* and *maintain* previous partners. Get an overview of the different interactions in their projects, and figure out how Avantor handle their relationships and obtain *learning* from the projects.

#### Introduction (5-10 minutes)

- Open the interview with a warm welcome
- Present ourselves, the main objectives of our thesis and reasons for choosing Avantor AS as a case
- Provide an overview of the agenda
- Ask the respondent to present themselves and their role in Avantor

#### Main Part (50-60 minutes): Avantor as a PBO in the setting of complex projects

##### *Complex Projects*

- Describe a typical construction project and its complexity?
- What are Avantor's involvements in these projects? Who are involved from your network?
- How do you develop a deal/contract and how flexible are you in negotiations?
- How is communication and coordination handled internally? Externally? Across projects?
- What is a typical challenge Avantor may face?
- In terms of being a PBO, what are Avantor's strengths compared to competitors?

##### *Creating and Building Network Capabilities*

- How would you explain Avantor's ability to build relationships?
  - How important is the experience of Avantor in developing new projects, and partners?
  - How important is trust in other partners?
  - Individuals in the companies? In Avantor?
- How will you describe the relationships Avantor has with other firms in performing projects? Is it Avantor approaching other companies, or the other way around? Who usually initiated the deal and cooperation?

- How does Avantor map potential partners and how do you reach out to them?
- When the relationship is established, how does Avantor communicate with its network (important to see how Avantor manage and maintain its network)?
- What opportunities/restrictions has Avantor gained from its network, and how does it influence Avantor?
- How do you create trust between you and your partners / project delegates?
- How do you balance the stability in the projects? Tight control, contracts? (Uncertainty, risk, schedule, goals, dynamic
  - How much flexibility do you give your partners and what do you require of them?

#### *BI-Project*

- How was this project different from previous?
- Why do you think BI chose to settle in Nydalen area?
- How did past experience affect this project and what were the learning outcomes?
- How did Avantor perform a project of this size?
- How was the contract with the different participants developed?
  - What were the most important aspects of the contracts?
- How did Avantor involve partners to this project?
- How did Avantor's network react during this project?

#### **Close Up (8-10)**

- Summarize the interview
- Ask the respondent if he will add any additional information, or if he has any questions for us.
- Ask for availability of documents, meeting protocols and yearly reports
- Lastly, thank the respondent for taking time for this interview



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**Exhibit 2: Interview Guide BI**

This interview guide is developed according to the literature and the theoretical framework developed on the topics of network theory, strategizing in networks, complex projects, and network capabilities. The interviews are of a semi-structured approach that involves flexibility to ask follow-up questions when it is relevant and are not included in this interview guide. The interview is divided into three parts.

**Respondent:** BI Norwegian Business School

**Interviewers:** Tahiya Hussain and Ine Reinemo

**Goals of the interview:** Define the BI/Avantor case as a complex project. Get insight in what were the most important attributes in the relationship between Avantor/BI. Get an overview of the different interactions in the project, and figure out how Avantor handled their relationships in the project.

**Introduction (5-10 minutes)**

- Open the interview with a warm welcome
- Present ourselves, the main objectives of our thesis and reasons for choosing BI as an example to our case
- Provide an overview of the agenda
- Ask the respondent to present themselves and their role in the BI-project

**Main Part (50-60 minutes): BI's re-location to Nydalen**

*Interaction between the main actors, BI and Avantor*

- How will you describe the relationship between Avantor/BI before the agreement of Nydalen campus?
- Who initiated the deal and cooperation?
- Where did Avantor have to compromise, and how did you experience Avantor's ability to fulfill the wishes and demands of BI?
- Which parties had the most control? Avantor or BI?
- Why do you think BI chose Nydalen and Avantor in the end?
- Which factors were the most crucial in the agreement?
  - Was it individuals or groups with more influence than others on the agreement? Were these people influencing the outcome?
- What is your opinion and viewpoint of the agreement between the two?
- How did you experience the cooperation?

**Close Up (8-10)**

- Summarize the interview
- Ask the respondent if he will add any additional information, or if he has any questions for us.
- Ask for availability of documents, meeting protocols and yearly reports
- Lastly, thank the respondent for taking time for this interview

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**Exhibit 3: Industry Overview (Union Report 2015; DNB 2016)**

*CBD (central business district) west:* The vacancy in this area has fallen by almost 5000 m<sup>2</sup>. The majority of this reduction was the renting of Storebrands building in Ruseløkkaveien 26, where 11,900m<sup>2</sup> were put on market in 2015. Additionally, Carnegie stands for one of the most recent lettings, by occupying Fjordalleen 16 at Aker Brygge (2500m<sup>2</sup>) during 2016. Furthermore, the moving of Kvale, resulted in new 3000m<sup>2</sup> to market, affecting the vacancy. The prices in this area peaked in 2014, and has since this been slightly reduced, today the price range from NOK 2,850 to NOK 4,000 per m<sup>2</sup> (DNB 2016).

*CBD (central business district) East:* The main actors in this area are HAV eiendom and OSU, developing Bjørvika. The vacancy level of this area is low, however CBD east experienced a slightly increase of 1500m<sup>2</sup> to last year. This increase is partly explained by planned, unfinished buildings. In example, the commercial TV Channel TV2 plans to move in to this area by 2017. A high competition to get the biggest tenants has created adjustments to the prices in the area. Today, the prices are slightly lower than the CBD west area, ranging from 2,500-3,000 per m<sup>2</sup>.

*Inner city:* The vacancy in this area is large, however it has decreased by 6,000 m<sup>2</sup> the last year. The centre is an attractive area for most businesses, including the public sector, so the main reason for the high vacancy level is refurbishment. The rents in this area have been stable (similar as those in CBD east), but it is expected that the area is one of the first to experience an upturn in 2017. *Outer city:* This area is experiencing an increase in vacancy to 54000m<sup>2</sup>. This increase might be partly explained by the inclusion of Skanska and Entras building, which is planned to be done by 2016. The rents at the outer city are significantly lower than those in the CBD and inner city, even though the facilities are almost the same.

*Skøyen:* The vacancy has been stable, and it increased slightly by 1200m<sup>2</sup>. The main reason for this increase is Moteforum leaving Sjølyst Plass. At Skøyen there has been much sub-letting, leading to a decrease in the average rate. The area is attractive and it is expected that it will be among those areas to experience the upturn first. Today, the rents range from 2250-2800 per m<sup>2</sup>.

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At *Helsfyr/Bryn*, the vacancy is unchanged at 55000m<sup>2</sup>. Even though there has been little activity in this area the last year, it is likely that this area will experience more pressure as a lot of new building projects are planned at Valle. There is a low level of net relocation in the area, but companies seem to stay on expiry of their leases. One of the reasons for this might be the lack of a “centre”, such as Torgbygget in Nydalen. The new buildings might result in a price pressure to the existing buildings. However, it is expected to be a good level of rents for the new buildings.

*Økern/Ulven*: In this area, the vacancy decreased by 1700m<sup>2</sup>. Rent levels in this area are split, as Økern/Ulven consists of both new buildings and older buildings of less good quality. Thus the increased competition between the new buildings means that the prices are leveling out.

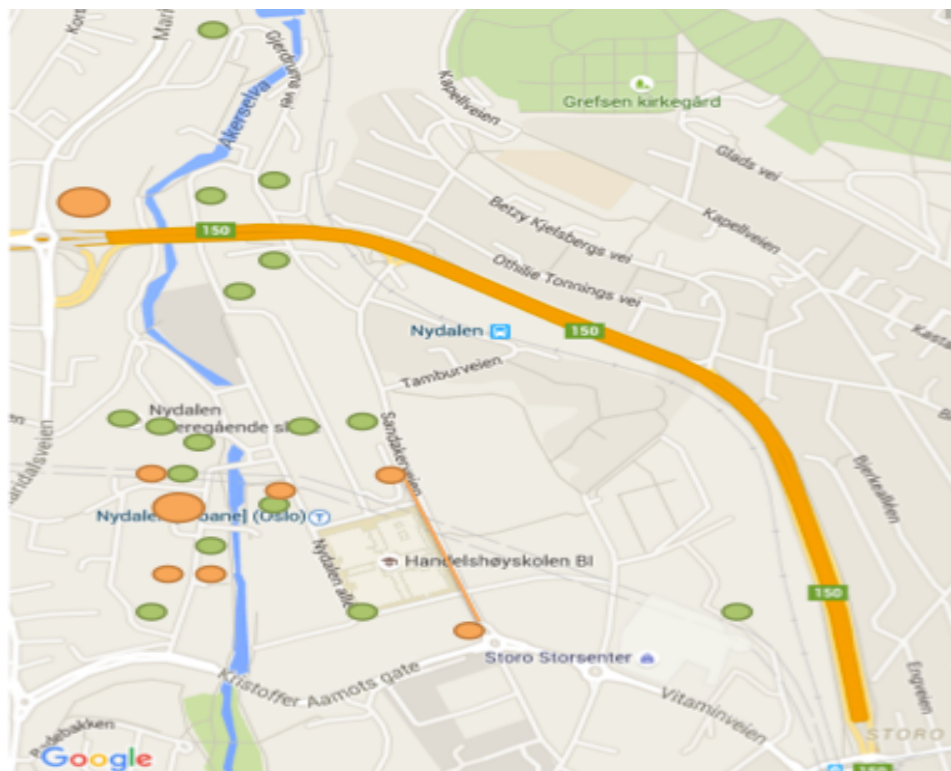
*Asker and Bærum*: Even though this area is not in the Oslo region, it is included in most reports, as it is very close to the capital. This area is one of those most affected by the insecurity in the oil sector. This year, the vacancy increased by 4,600 m<sup>2</sup>. The main increase in the vacancy concerns Kjørboveien and Eivind Lyches vei 10. While the development of Sandvika business centre leads to a reduction in the vacancy level. The most attractive areas are close to the rail station, the vacancy in the other areas has increased and led to a substantial correction in rents at locations outside the most attractive areas.

*Lysaker* still has a high vacancy, but it has been slightly reduced by 5000m<sup>2</sup>. The majority of this reduction has been the conversion of 75000m<sup>2</sup> in Philip Pedersens vei 20, creating a refugee reception centre. The high vacancy has led to a downturn in rents. Even though the prices are holding up close to the railway station, it is a high decrease the further away from the rail station the buildings are located. In order to solve the vacancy challenge, actors at Lysaker has engaged in giving free rental periods to attract new tenants.

*Fornebu*: As the other western areas, Fornebu also experienced increased vacancy. One of the main reasons for this increase is that large parts of Akerhus will be vacant in 2016, even though the lease runs until 2019. Statoil and Telenor also have vacant space in their buildings. The rents in this area range from 1400-2150 per m<sup>2</sup>.

**Exhibit 4: Overview of Avantor’s projects and properties (Avantor 2016)**

<b>Property overview Avantor</b>	<b>Project overview Avantor</b>
Gjerdrums vei 4	Maridalsveien 319-321
Gjerdrums vei 6	Spikerverket Boliger, byggetrinn 2
Gjerdrums vei 10 A	Spikerverket, Næringsbygg B og E
Gjerdrums vei 11	Sandakervein 113-119
Gjerdrums vei 19	Nydalsveien 33
Gullhaug torg 1	Husøy havn (not included in the map, as it is not in the Nydalen area)
Nydalen Allé 37	Vallø (not included in the map, as it is not in the Nydalen area)
Nydalsveien 12	
Nydalsveien 21	
Nydalsveien 28	
Nydalsveien 30 A	
Nydalsveien 30 B	
Nydalsveien 30 C	
Nydalsveien 32 B	
Nydalsveien 33	
Sandakerveien 128	
Strømveien 200 (Not included in map)	
Vitaminveien 5B	



(Google Maps)

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**Exhibit 5: Copy of BI and Avantor Contract (Hovedavtalen 2002)****H O V E D A V T A L E (Hovedavtalen)**

mellom

**STIFTELSEN HANDELSHØYSKOLEN BI (BI)**

og

**AVANTOR ASA (Avantor)****1 PARTENE OG MÅLSETNINGER MED HOVEDAVTALEN****1.1 Partene**

BI er en av Norges ledende utdanningsinstitusjoner i bedriftsøkonomi, ledelse og markedsføring og tilbyr ulike undergraduate-, graduate- og executive-utdannelser i Oslo-området.

Avantor er et av Norges største eiendomsselskaper med særlig fokus på eiendomsutvikling, forvaltning og nyskaping.

**1.2 Målsetninger med Hovedavtalen**

BI ønsker å samle sine virksomheter i Oslo-området på ett sted. Samlokaliseringen skal kunne bidra til å gjøre BI til en enda sterkere aktør i det internasjonale utdannings- og forskningsmarkedet enn det institusjonen er i dag. BIs visjon er å bli den beste handelshøyskolen i Europa, og samlokaliseringen skal på en offensiv måte kunne bidra til dette. Samlokaliseringen fordrer også muliggjøring og tilrettelegging for mer relevant og tettere samarbeid med norsk og internasjonalt næringsliv. En forutsetning for samlingen er at det kan etableres fleksible lokaler med gode bygningsmessige løsninger både teknisk og arkitektonisk.

Avantor er i ferd med å utvikle Nydalen til en ny og levende bydel i Oslo med hovedvekt på privat næringsliv. Ved etablering av en større utdannings- og forskningsinstitusjon i Nydalen ønsker Avantor å styrke Nydalens stilling som et nytt næringslivssentrum i Oslo og gjøre bydelen enda mer attraktiv for det private næringsliv. Det er Avantors mål at Nydalen skal bli stedet for nytenkning, nyskaping og utvikling i Oslo.

BI tilbyr en bygningsmessig fleksibel smarthouse løsning med vekstposjoner og muligheter for outsourcing av tjenester og funksjoner. I tillegg tilbys venturefond og et FoU-fond. Sammen med etablering av fora for møter mellom næringsliv og BIs faglige personale, vil dette gjøre Nydalen spesielt interessant for BI. Avantor vil også legge vekt på å tilby praktiske studentleiligheter og hybler og legge til rette for

etablering av et levende studentmiljø i Nydalen. For å muliggjøre BIs samlokalisering er Avantor i tillegg villig til å ta over BIs forpliktelser knyttet til nåværende lokaliseringer.

Avantor er kjent med at BI har tanker om en utvidelse av høgskolen til universitetsstatus med et utvidet undervisningstilbud. For å tilrettelegge for en slik utvidelse vil Avantor ta hensyn til et slikt bruksformål ved reguleringen av det siste uregulerte området i Nydalen.

### **1.3 Hovedavtalen og underliggende avtaler**

Denne hovedavtalen regulerer partenes rettigheter og forpliktelser knyttet til hovedelementene og rammene for de avtaler som er nødvendige for å oppfylle målsettingen om samlokalisering, j.fr. pkt 1.2. I tilknytning til denne hovedavtalen inngås samtidig følgende delavtaler:

- Leiekontrakt Sandakerveien 116-118. (Skilleark 2)
- Leiekontrakt for parkeringsplasser Sandakerveien 116-118 (Skilleark 2)
- Drifts- og vedlikeholdsavtale for Sandakerveien 116-118 (Skilleark 2)
- Leiekontrakt studentersamfunn Nydalsveien 15-17 (Skilleark 3)
- Drifts- og vedlikeholdsavtale Nydalsveien 15-17 (Skilleark 3)
- Kjøpekontrakt på Elias Smiths vei 15, Sandvika (Skilleark 4)
- Kjøpekontrakt på "Sjømannsskolen", Ekeberg (Skilleark 5)

Denne hovedavtalen og delavtalene er innbyrdes avhengig av hverandre. Blir deler av avtaleverket helt eller delvis misligholdt får pkt. 12 nedenunder anvendelse.

### **1.4 Forbehold/reservasjoner**

Prosjektet forutsetter offentlig godkjenning av et tillegg på tomtens reguleringsformål til undervisning og normal rammetillatelse og igangsettingstillatelse. Det er en forutsetning for avtalen at slike tillatelser gis.

BI ønsker å tinglyse leiekontraktene og forutsetter at det gis konsesjon for leieavtalene. BI plikter selv å søke om dette umiddelbart etter kontraktsignering.

## **2 VIRKSOMHETER SOM SKAL SAMLES I NYDALEN**

Alle BIs virksomheter i Osloregionen skal samles i Nydalen, herunder undergraduate-graduate- og executive-utdannelsene som nå er lokalisert på Schous plass, Hansteens gate, Skøyen, Ekeberg og Sandvika.

### **3 LEIEFORHOLD TIL LOKALER I NYDALEN**

#### **3.1 Leiekontrakt Sandakerveien 116/118**

Avantor skal totalt stille til disposisjon for BI om lag 48.500 kvm BTA i Sandakerveien 116-118 i Nydalen (Leieobjektet). Leiekontrakt følger i skilleark 2.

#### **3.2 Leie av parkeringsplasser i Sandakerveien 116/118**

BI skal leie 200 parkeringsplasser for egne ansatte og 280 plasser for studentparkering. Leiekontrakter følger i skilleark 2. I tillegg stilles 200 plasser for besøkende til BI som vanlig avgiftsparkering.

#### **3.3 Drift og vedlikehold av leieobjektet**

BI forplikter seg til å inngå avtale om felles drift og vedlikehold med Avantor Drift. Avantor Drift kan også tilby seg å utføre øvrige drifts- og vedlikeholdsoppgaver av BIs lokaler. Driftsavtalen følger i skilleark 2.

#### **3.4 Tilleggstjenester Avantor skal legge til rette for**

Avantor skal i leieperioden sørge for å tilrettelegge for drift av kantine for ansatte og studenter. Avtale med driver skal inngås direkte med Avantor, men BI skal ha rett til å uttale seg om hvem det skal inngås avtale med. Kantinelokalene for studentene skal i liten grad omfatte plass og inventar for bespisning, da konseptet innebærer at maten hovedsakelig skal nytes på lærestedene eller i fellesarealene. Dette er også omtalt i leiekontrakten pkt 23 G.

Avantor skal i leieperioden sørge for å tilrettelegge for drift av Bokhandel. Bokhandelen skal lokaliseres på et særskilt areal i en av blokkene som BI skal leie. Leiekontrakten for bokhandelen skal inngås direkte med Avantor, men BI skal ha rett til å beslutte hvilken bokhandel det skal inngås avtale med. Dette er også omtalt i leiekontrakten pkt 23 H.

#### **3.5 Funksjonalitetsgaranti**

Prosjektet som tilbys BI er basert på omforenet romprogram for BI som også er vedlagt leiekontraktens funksjonsbeskrivelse. Dokumentene fastlegger antall personer prosjektet skal dimensjoneres for totalt og innenfor de spesielle romkategoriene. Avantor har ansvaret for at bygget fungerer normalt for BIs virksomhet med denne samtidsbelastningen.

#### **4 OVERDRAGELSE AV BI'S EIENDOMMER OG LØPENDE LEIEKONTRAKTER TIL AVANTOR**

##### **4.1 Sandvikæiendommen**

Avantor kjøper og overtar eiendommen innen BIs forpliktelse til å betale leie for Sandakerveien 116-118 inntrer. Kjøpesum ved overtakelse er satt til NOK 311,0 mill. Kjøpekontrakt følger i skilleark 4.

Hjemmel til eiendommen innehas av BI-Bbygg ANS hvor BI er deltaker med 99% og Bedriftsøkonomisk Institutt AS – som er 100% eiet av BI – har 1%. Det kan være av interesse for Avantor å overta dette eierselskapet i stedet for direkte kjøp av eiendommen. BI er positiv til dette, forutsatt at salg av BI-Bbygg ANS ikke på noen måte stiller BI ugunstigere enn ved direkte salg av eiendommen. Det skal i så fall inngås egen avtale om dette som gjenspeiler vilkårene i kjøpekontrakten under skilleark 4.

##### **4.2 Sjømannsskolen**

Avantor kjøper og overtar eiendommen innen BIs forpliktelse til å betale leie for Sandakerveien 116-118 inntrer. Kjøpesum ved overtakelse er satt til NOK 120,0 mill. Kjøpekontrakt følger i skilleark 5.

##### **4.3 Leieavtaler som skal overtas av Avantor**

Avantor skal overta følgende leieforhold fra BI:

Leiekontrakt av 09.03.2001 i Elias Smiths vei 14 i Sandvika.  
Leiekontrakt av 01.03.2000 i Karenslyst Allé 8A på Skøyen.  
Leiekontrakt av 15.12.1997 i Hansteens gate 2 i Oslo.  
Tilleggsavtale av 27.11.2001 i Karenslyst Allé 8a på Skøyen.

Avantor overtar avtalene mot en reduksjon av kjøpesummen for Sandvika på NOK 11,0 mill., med mindre BI beholder/avvikler noen av disse forpliktelsene eller samtykker til overføring ikke blir gitt. Blir en eller flere av avtalene ikke overført Avantor, faller en forholdsmessig andel av reduksjonen bort. Summen er fordelt med en overtakelseskostnad for Elias Smiths vei 14 på NOK 9,8 mill. og en overtakelseskostnad på Karenslyst alle 8A på NOK 1,2 mill. Overtakelsen av leiekontrakten i Hansteens gate 2 er satt til 0.

##### **4.4 Generelle bestemmelser**

###### Leieforholdene

Avantor forplikter seg til å tre inn i leieforholdene nevnt i pkt. 4.3 når BI har overlevert lokalene til Avantor i den stand som kreves etter de gjeldende leiekontraktene. BI er ansvarlig for at utleier aksepterer leieskiftet. BI garanterer at det ikke er forpliktelser knyttet til leieforholdene ut over det som fremgår av leiekontraktene.



Bl forplikter seg til ikke å endre leieforholdene, uten etter samtykke fra Avantor. Slikt samtykke kan ikke nektes dersom Bl tilbyr seg å bære de økonomiske konsekvensene av endringene.

Bl skal sørge for at lokalene ved utflytting er i samme stand som de etter leiekontraktene skal være ved tilbakelevering til utleier. Bl forplikter seg til å gjøre opp alle krav utleier måtte ha knyttet til leieforholdet frem til utflyttingstidspunktet, og til å avklare alle tvister mot utleier.

#### Eiendommene

Avantor er gitt anledning til å foreta teknisk og juridisk Due Diligence Investigation av eiendommene før avtaleinngåelsen, og eiendommene overtas – med de begrensninger som følger av kjøpekontraktene - slik de står (as-is) på avtaletidspunktet. Bl forplikter seg til å forestå alminnelig godt vedlikehold av de to eiendommene som kjøpes frem til overtakelsen, men kjøper aksepterer alminnelig slitasje og elde fram til overtakelsestidspunktet.

Avantor er kjent med eiendommens regulering.

Brutto kjøpesum for eiendommene ved overtakelse 15.08.2005 er NOK 431,0 mill. Klausuler i skjøtet om tilbakebetaling til Bærum kommune ved salg av Sandvikaeiendommen og utnyttelse av utbyggingspotensialet i Sandvika overtas av Avantor for et fradrag i kjøpesummen på eiendommene på NOK 23,0 mill. I tillegg kommer et fradrag på NOK 11,0 mill for overtakelse av leiekontraktene, jf. pkt. 4.3. Netto kjøpesum for eiendommene er NOK 397,0 mill. Dersom Bl selv løser, betaler ut eller får fjernet deler eller alle heftelsene frem til overtakelsesdatoen, eller disse av andre grunner faller bort før dette tidspunktet, vil fradraget i kjøpesummen justeres tilsvarende.

Avantor har opsjon på kjøp av Bls eiendommer med tre måneders varsel frem til ferdigstillelse av Leieobjektet, mot tilbakeleie, uten at dette skal gi Bl økte økonomiske forpliktelser jf. kjøpekontraktene.

Kjøpekontrakter følger i skilleark 4 og 5.

## **5 LÅN/KJØPSOPPSJON**

Avantor tilbyr å ta opp et lån av Bl til følgende betingelser:

Beløp: Inntil NOK 431 millioner.  
Formål: Lånet etableres som en hel eller delvis selgerkreditt i forbindelse med Låntakers overtagelse av Långivers eksisterende eiendomsmasse ("Overtagelsen"), og etableres ved Overtagelsen som et gjeldsbrevlån. Långiver må innen 1. januar 2004 varsle om hvilket beløp som skal inngå i låneordningen.

- Rentesats: 10 % p.a. som betales forskuddsvis per kvartal.
- Forfallsdato: 31.07.2025.
- Sikkerhet: Avantor skal 15.06.2005 stille sikkerhet for hovedstolen med tillegg av 7,5 %, og har fra samme tidspunkt rett, men ikke plikt, til å overta Bls eiendommer nevnt i pkt. 4.1 og 4.2. Hvis Avantor velger å overta eiendommene 15.06.2005 skal dette ikke medføre noen plikt for Bl til å flytte før 15.08.2005. Sikkerheten skal tjene til dekning av hovedstolen med forfalte renter og neddiskontert verdi av differansen mellom 10 % og rentesats for lange norske statsobligasjoner for gjenværende del av låneperioden. Ved endringer av hovedstolen skal sikkerheten justeres tilsvarende. Avantor skal til enhver tid ha opsjon på å tilby en av følgende tre nedenstående alternativer eller en kombinasjon av dem som sikkerhet. Variasjon begrenses til en gang i året med skriftlig varsel per 1.10 med virkning fra første bankdag neste år. Ved salg fra Avantor skal skifte av sikkerhet til Pantsatt innskudd (ii) og / eller Bankgaranti (iii) aksepteres.
- (i) 1. prioritets pant, sideordnet med ordinær bankfinansiering i fast eiendom tilhørende "AS ABC", et "single purpose" selskap som skal etableres for å eie Sandakervien 116-118 (Nydalen Campus) hvor Handelshøyskolen Bl skal leie undervisningslokaler ("Eiendommen"). Samlet 1.prioritetsbelåning (Bl + bank / finansieringsinstitusjon) skal aldri overstige det selskapets ordinære finansieringsforbindelser aksepteres som sideordnet 1. prioritets belåning og til enhver tid oppad begrenset til 75% av lånetakst på Eiendommen, eller
  - (ii) Pantsatt innskudd i bank ("kontantdepot"), eller
  - (iii) Bankgaranti som selvskyldnerkausjon på rullerende 3 års basis som fornyes årlig. Dersom Bl skal gjøre mislighold gjeldende som følge av manglende fornyelse av garantien, må dette skriftlig varsles med 30 dagers frist for Avantor til å stille tilfredsstillende sikkerhet. Slikt varsel kan uansett ikke gis før etter tidspunktet for fornyelse av garantien eventuelt er overskredet.
- Tilbakebetaling: (i) Utestående lån skal i sin helhet tilbakebetales ved Forfallsdato.
- (ii) Ved ethvert salg av AS ABC eller Eiendommen har Bl opsjon på å kreve hel eller delvis innfrielse.
  - (iii) Bl har rett til å kreve inntil NOK 131 mill nedbetalt, dog skal varsel om slik nedbetaling gis minimum 12 måneder før nedbetaling. I tillegg kan Bl, innen 1.10 hvert år med skriftlig varsel, kreve NOK 50 mill. nedbetalt av lånet for utbetaling første bankdag påfølgende år.
  - (iv) Dersom Bl på noe tidspunkt benytter sin opsjon til å redusere sitt leieareal, har Avantor rett til å førtidig nedbetale et beløp som tilsvarer samme forholdsmessige andel som leiereduksjonen.

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- (v) Dersom BI benytter sin nedenstående kjøpsopsjon eller forkjøpsrett (se pkt. 6) skal Avantor ha rett til å nedbetale lånet forholdsmessig tilsvarende BIs eierandel i eiendommen/selskapet. Nedbetaling skal skje på samme tidspunkt som BI skal betale kjøpesummen for eiendommen/selskapet.

BI gis i tillegg anledning til å kjøpe eiendommen Sandakerveien 116 – 118 eller alle aksjene i AS ABC. Kjøpesummen skal baseres på en brutto yield på 7,75% i forhold til byggets brutto leieinntekter, inklusive parkering, i 2006. Opsjonen må benyttes innen 01.03.2005. Overtakelsestidspunkt og tidspunkt for betaling av kjøpesummen skal være 02.01.2006. Eiendommen overtas fri for pengeheftelser. Lånet innfris per 02.01.2006 hvis kjøpsopsjonen gjøres gjeldende.

Hvis BI ønsker å benytte noen av disse opsjonene skal det utarbeides særskilte låneavtale(r) og kjøpsavtaler/kjøpsdokumenter.

## 6 FORKJØPSRETT

Dersom Avantor selger hele eller deler av eiendommen Sandakerveien 116-118 (Eiendommen) eller eierandeler i et eventuelt "single purpose"-selskap som eier Eiendommen (Salgsobjektet), skal BI ha rett til å kjøpe disse deler/eierandeler på samme vilkår som det styret i eierselskapet til Salgsobjektet har godkjent. Retten til kjøp er betinget av at BI fullt og helt trer inn i alle vilkår, inkl. alle omkostninger, som er akseptert av eierselskapets styre og foreligger som reelt kjøpstilbud. Forkjøpsretten faller bort dersom den ikke med endelig bindende virkning er utøvd innen 45 dager etter at BI skriftlig er varslet om styret i eierselskapets aksept av pris og vilkår for salg av Salgsobjektet. Fristen utvides til 60 dager dersom slik varsel sendes i perioden 15. juni til 1. september. BIs frist til å gjøre forkjøpsretten gjeldende gjelder selv om endelig beslutning om overdragelse av Salgsobjektet skal fattes av andre beslutende organer enn styret i eierselskapet.

BIs forkjøpsrett kommer ikke til anvendelse ved overdragelser av hele eller deler av Salgsobjektet mellom selskaper i samme konsern. (Konsern defineres i h.t. aksjelovens bestemmelser pkt 1.3).

Forkjøpsretten kan gjøres gjeldende ved alle salg som beskrevet ovenfor i hele leieperioden, jf. Leieavtalen. Avantor skal sørge for at eventuelle nye eiere til Salgsobjektet aksepterer forkjøpsretten.

Forkjøpsretten skal ikke være til hinder for pantsettelse/opplåning på Salgsobjektet.

## 7 STUDENTBOLIGER

Hybler – tilrettelagt for offentlig støtte

## 8

Avantor tilbyr BSV-stiftelsen, eller den BI utpeker, å kjøpe Sandakerveien 102 som er planlagt med inntil 349 studenthybler tilrettelagt for offentlig støtte. Etablering av studenthybler på denne eiendommen fordrer omregulering.

I tillegg tilbyr Avantor BSV-stiftelsen, eller den BI utpeker, å kjøpe eiendommen Nydalsveien 13 som nå er under regulering. Bygget vil kunne inneholde ca 70 studenthybler og vil tilrettelegges for offentlig støtte.

Som referanseprosjekt på arealer, kvaliteter og leiepriser legges SiOs utbygging på Bjølsen til grunn. Tomtenes pris skal ikke overstige de grensene som blir satt som forutsetning for den offentlige prosjektstøtten.

Avantor skal tilby tomtene ferdig regulert med godkjente rammetillatelser innen 1. mai 2004.

På naboeiendommen Gunnar Schjelderups vei 11 er det under regulering et boligfelt på over 600 leiligheter/hybler. Utbygger, Fri Eiendom AS, har uttrykt ønske om et samarbeid med BSV-stiftelsen eller den BI utpeker om å tilrettelegge for ca 300 hybler i dette prosjektet tilpasset offentlig støtte.

Bjerke Studentby, der BI studenter allerede leier, som eies av SiO er også under vurdering for salg/utleie og kan være et godt ytterligere tilbud. SiO er interessert i å drøfte et samarbeid om dette.

#### Hybler/leiligheter - privatfinansiert

Avantor tilbyr seg å bygge og selge eller leie ut til markedspris inntil 180 studentleiligheter av sitt prosjekt på Solsiden i Nydalen til BSV-stiftelsen eller den BI utpeker. Det skal inngås særskilt avtale om vilkårene for salg eller utleie. Slik avtale skal være ferdig forhandlet før byggestart for prosjektet med studentleiligheter.

Det kan i tillegg opplyses at det allerede er ført opp 211 utleieleiligheter/hybler i Gunnar Schjelderups vei 33. Eier av eiendommen tilbyr leiligheter og hybler til markedet og har uttrykt ønske om et møte med en BI.

## **8 ETABLERING AV STUDENTERSAMFUNN / IDRETTS OG FRITIDS- AKTIVITETER**

### Studentersamfunn

BI leier lokaler til etablering av studentersamfunn i Nydalsveien 15/17. Totalt areal til disposisjon for studentersamfunn utgjør ca 2.310 kvm. Leiekontrakt følger i skilleark 3. Den avtalte leieprisen inkluderer en ombyggingskostnad på NOK 22,4 mill. Partene skal samarbeide om ombyggingen og benytte de samarbeidsmulighetene et studentersamfunn har på leveranse- og innredningssiden. Kostnadsreduksjoner eller økninger avregnes i henhold til leiekontraktens pkt. 23c.

### Idretts og fritidsaktiviteter

I tilknytning til SiO's prosjekt på Bjølsen er den gamle Sporveishallen regulert til allmenntilgjengelig formål/idrettsanlegg. Hallen på totalt 5.000 kvm inneholder to saler for

håndball, fotball, innebandy og lignende, samt mindre saler for andre idrettsaktiviteter. Hallen kan også brukes til større kulturarrangement.

Eier ønsker å overdra hallen til Oslo kommune som på sin side ønsker å legge til rette for bydelsbasert virksomhet. BIs studenter bør, på linje med andre brukere, kunne inngå avtaler om bruk av denne hallen.

Voldsløkka friområde ligger innenfor 5 minutter gangavstand fra Nydalen Campus, og er til fri disposisjon for ulike mosjonstiltak m.v.

## 9 VENTUREFOND OG FoU FOND

Avantor skal etablere et venturefond med en startkapital på NOK 10 millioner. Investorer i Nydalen skal først og fremst inviteres til å delta. Fondet skal baseres på forretningsmessige prinsipper vedrørende investeringsområdene. Startup-BI har rett til å videreføre vederlagsfritt sin 5 prosents andel i virksomhetene fondet investerer i ved første gangs emisjon. Det forutsettes at venturefondet og Startup-BI lokaliseres i Nydalen. Avantor kan i denne forbindelse tilby egne lokaler utenfor det planlagte kvartalet. Venturefondet skal være etablert senest samtidig med at BIs forpliktelse til å betale leie for Sandakerveien 116-118 inntre.

Avantor skal etablere et fond for Professorships, Scholarships og FoU-prosjekter på til sammen NOK 60 millioner. Fondet skal bygges opp med kapital fra næringslivet som skal inviteres til å delta og derigjennom få profilering og mulighet til å bli samarbeidspartnere med BI. Avkastningen av fondet skal benyttes til utdeling av Professorships, Scholarships og FoU-prosjekter. Fondet skal forvaltes av næringslivet og BI, med rett for BI til å beslutte utdeling av midler fra fondet. Investorene har krav på tilbakebetaling av nominelt innskutt kapital når BIs leieforhold utløper, senest 31.07.2025. FoU-fondet skal være etablert senest samtidig med overtagelse av leieforholdet i Sandakerveien 116-118.

Hvis FoU fondet ikke stilles til disposisjon som avtalt kan BI velge å trekke det nødvendige beløp tillagt renter av leien fortløpende fra første leieforfall frem til fondet er etablert med NOK 60 mill. Dersom BI har benyttet utlånsopsjonen etter pkt.5 utvides retten til å trekke i leien til å omfatte renten på lånet, frem til fondet er etablert med NOK 60 millioner. Hvis fondet kan plasseres innenfor den samlede utlånsrammen på NOK 431 millioner skal renten være 10 % p. a fra 15.08.2005 og vanlig markedsrente forut for dette. Dersom fondet ikke kan plasseres som en del av lånet eller utlånsopsjonen ikke er benyttet, skal rentesatsen være lik vanlig markedsrente.

## 10 KONKURRENTKLAUSUL

Avantor kan ikke leie ut i Nydalsbyen til virksomheter i direkte konkurransesituasjon med BI. Som konkurrenter betraktes norske og internasjonale høyskoler og universiteter som gir studenttilbud innen BIs kjernefagområder på tidspunktet for undertegning av denne avtalen. Dette kan eksempelvis være NHH, off. høyskoler for

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eksempel HiO, universiteter for eksempel UiO, NKS, NKI, utenlandske høyskoler som for eksempel Handelshøyskoler i Stockholm/Kjøbenhavn etc., IMD, INSEAD osv. Begrensningen gjelder i leieperiodens første 5 år. BI kan ikke nekte en slik utleie uten saklig grunn.

Avantor kan i tillegg ikke leie ut eiendommen Ekeberg uten samtykke fra BI til virksomhet som er definert i direkte konkurranse med BI s virksomhet i en periode på 5 år fra overtakelse. Som konkurrenter betraktes norske og internasjonale høyskoler og universiteter som gir studenttilbud innen BIs kjernefagområder på tidspunktet for undertegning av denne avtalen. Dette kan eksempelvis være NHH, off. høyskoler for eksempel HiO, universiteter for eksempel UiO, NKS, NKI, utenlandske høyskoler som for eksempel Handelshøyskoler i Stockholm/Kjøbenhavn etc., IMD, INSEAD osv. BI kan ikke nekte slikt samtykke uten saklig grunn.

#### **11 MOTSTRID**

Det som er bestemt i hovedavtalen går i tilfelle motstrid etter det som er bestemt i de enkelte delavtaler. Videre går senere inngåtte avtaler mellom partene angående hele eller deler av gjennomføringen av samlokaliseringen i tilfelle motstrid foran eldre avtaler, slik at det som er bestemt i den avtale som er sist underskrevet av begge parter skal gjelde.

#### **12 MISLIGHOLD**

Ved vesentlig mislighold av denne hovedavtalen eller av en eller flere av delavtalene kan den part som misligholdet rammer heve avtalen. Hvis misligholdet er av vesentlig betydning for det samlede avtaleforholdet (hovedavtalen med delavtaler under ett) skal det samlede avtaleforholdet i så fall heves også for de deler som ikke er misligholdt. Som vesentlig for det samlede avtaleforhold regnes i denne sammenheng bl.a. forhold som isolert sett gir en av partene rett til å heve leieavtalen for Sandakerveien 116-118 eller hvis kjøpekontraktene for BI's eiendommer vesentlig misligholdes.

For øvrig gjelder vanlige misligholdsbestemmelser og det som er bestemt i den enkelte delavtale.

#### **13 TVISTER**

Tvister som oppstår som følge av Hovedavtalen eller en av delavtalene løses av de alminnelige domstolene. Som verneting vedtas Oslo tingrett. Tvisteløsning ved voldgift forutsetter avtale mellom partene.

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**14. BEKREFTELSE OG UNDERSKRIFT**

Selger og Kjøper vedtar med sine underskrifter alle punkter i denne kontrakt. Denne kontrakt er utferdiget i 2 likelydende eksemplarer hvorav partene beholder hvert sitt.

Sandvika 5. mars 2002

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Stiftelsen Handelshøyskolen BI

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Avantor ASA

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## 9. Appendices

### *Appendix 1- Preliminary Thesis Report*

ID numbers: **0893138**  
**0895954**

## Preliminary Thesis Report

# *How do project-based- organizations build and sustain network capabilities?*

- A case study of Avantor -

Hand-in date:  
15.01.2016

Campus:  
BI Oslo

**Exam Code: GRA 1902**

Name of Supervisor:  
*Lena Bygballe*

Programme:  
Master of Science in Business - Major in Strategy



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## Summary

This paper is the preliminary report of the research topic chosen by two master degree students at Handelshøyskolen BI for their Master Thesis. Moreover, the work on this report and the final thesis also involve the assistance and guidance from their supervisor. The report follows the outline of the introduction to the research topic, research question, objectives of the thesis and lastly a plan for data collection and the thesis progression. In addition, this preliminary report will be added as an appendix of their final thesis.

The research topic chosen by the students concerns studying the development of network capabilities of a firm that is embedded in a business network and how these capabilities are developed and sustained in terms of complex projects. The primary literature of the research are (1) network theories, (2) strategizing in networks (3) network capabilities and lastly (4) complex projects. The students provide a theoretical background in this order, to provide a foundation for the research. Some suggestions for further studies and critics of the theories are also provided in this section. This part presents a gap in the literature, related to the creation and sustainability of network capabilities and organizational and managerial capabilities in complex projects. This emphasizes the need for research on this field. The research question is formulated from this gap as follows:

*How do project-based-organizations build and sustain network capabilities?*

A detailed research design and methodology section presents how the students intend to perform the study and collect data. That is, a single-case study of the Norwegian company Avantor as a design, while methods of data gathering are through semi-structured interviews, participant observation and secondary sources, such as company documents. This section also stress out the concepts of reliability and validity issues in order to secure good quality on the study. The last part of the preliminary report provides the project management of the thesis in terms of time and planning over 8 months. A detailed description of how the research project started, how it will be handled and when the different steps and analysis of the projects will be done is given. As a conclusion, the preliminary's findings and its limitations are also outlined.

## **1. Introduction**

In this paper we will outline a research proposal regarding a case study on the Norwegian property development company Avantor. The purpose of the study is to further develop the theory concerning network capabilities, by studying how network capabilities are emerging, how they are sustained, and how they can lead to increased performance of a firm working with complex projects. The contribution to the theory foundation will hopefully result in a framework, explaining how a firm can sustain and create network capabilities in this setting.

The theory of both strategic and industrial networks are highly relevant, as more firms are engaging in different inter-organizational networks, resulting in both opportunities and constraints for the organization (Brass et al. 2004). A networking capability is argued to be one of the core competences of a firm, in creating competitive advantage (Walter et al. 2006). However, scholars argue that there is a gap in the research concerning the creation and sustainability of such capabilities (Äyväri and Möller 2008).

Studying the topic in a setting involving complex projects will further strengthen the understanding of the importance of network capabilities. Complex projects, construction and infrastructure projects themselves are difficult to manage (Scott et al., 2011). Moreover, interorganizational collaborations seem to be necessary in order to complete complex projects (Pitsi et al., 2003). This further creates the need to understand how to strategize and manage in networks, as well as a need for network capabilities. Considering the increased level of property development projects in the world, such as the Heathrow Terminal 5 in London (Davies et al., 2009), emphasizes the importance of assessing how firms are able to achieve project success. However, such projects may bring great difficulties due to their complexity on project implementation, integration and processes (van Marrewijk et al., 2008). Davies and Mackenzie (2014) point out that there are little or no focus on issues regarding the level of organizational and managerial capabilities required in a complex project.

Combining the gap concerning the creation and sustainability of network capabilities with the issues of strategizing and managing in complex projects give

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the basis for our research topic. Following this, our research question is formulated as follows:

*How do project-based-organizations build and sustain network capabilities?*

In order to answer this research question, we will conduct a qualitative study based on the case of Avantor, a property development company located in Oslo. We will perform semi-structured interviews and explore secondary sources such as company documents from previous years, which will give the case a longitudinal character.

## **2. Theoretical Foundation**

In order to have a theoretical foundation for answering our research question, we want to look at network theory, how a network affects the performance of a firm, and how firms can strategize in these networks. Further, we will look at how network capabilities are defined, and how these capabilities can be a core competence of a firm. In the end, we will discuss the basis of complex projects, as this is the context in which we will study network capabilities.

### ***2.1 Network Theory***

Literature concerning networks has studied both strategic- and industrial networks. In this research paper, both of the formats will be of interest.

#### ***2.1.1 Strategic Network***

The literature of strategic networks presents a different view on how firms differ in performance (Granovetter 1985; Gulati 1998; McEvily & Zaheer 1999) and contributes to the strategy research by adapting a relational view rather than an atomistic one (Gulati et. Al 2000). Jarillo (1988) introduced strategic networks as “long-term, purposeful arrangements among distinct but related for profit organizations that allow those firms in them to gain or sustain competitive advantage vis-a-vis their competitors outside the network”. He argues that the relationships among firms in a network are important for their competitive position, and that the strategic network is an important form of organization emerging from Williamson’s article of transaction cost (Williamson 1991). Powell (1990) further described the most important characteristics of this form of organization to be; “an indirect control, a relational means of communication, medium flexibility, and a high commitment between actors”, implying that there

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is a dependency between actors within the network. The network form is argued to be open-ended, however, it has restricted access and precluding partnerships with others (Powell 1990). The literature further explains how firms can be viewed as embedded in networks of relationships with other organizational actors, and how their position in a network affects their economic performance (Gulati 1998). Following, a strategic network can be defined as the system of relations between actors, which defines the opportunities and constraints of the firm (Gulati 1998). Moreover, Gulati (2000) argued that a strategic network is composed of enduring interorganizational ties, of strategic significance and includes strategic alliances. Examples of such strategic networks can be alliances, joint ventures, R&D collaborations, partnerships, board interlocks, clusters etc. (Gulati 2000).

### *2.1.2 Industrial Network*

The literature concerning industrial networks focus on how business relationships form networks, rather than how the organization can form their own network (Gadde et al 2003). As stated in Jarillo (1988), Johansen and Mattson (forthcoming) defined the industrial networks as “complex arrays of relationships between firms”. These relationships are established through interactions between firms, and the priority of relationship care were argued to be important for managers, as competing is a matter of positioning in networks (Johansen and Mattson, forthcoming). Further, the industrial network has been explained as consisting of ties and nodes, where a number of nodes are related to each other by specific threads (Borgatti and Halgin 2011, Håkansson and Ford 2002). The networks are representing some relationship, or lack of relationship, between the nodes (Brass et al 2004). Moreover, the focus is on the relations between actors, whether they are organizations or individuals, providing opportunities and constraints on behaviour (Brass et al 2004). As literature concerning strategic networks, the literature concerning industrial networks argues that a firm’s presence in a network might both enhance and limit their opportunities (Harrison et al 2010).

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## ***2.2 Performance Effects of Networks***

Several scholars have argued that a firm's performance might be strongly affected by their inter-firm ties, as well as strategic networks (Dyer and Singh, 1998; Gulati *et al.*, 2000). Dyer and Singh (1998) identified relation-specific assets, knowledge sharing routines, complementary resources & capabilities and effective governance of being possible sources of competitive advantage evolving from a firm's strategic network. Furthermore, Gulati *et al.* (2000) argued on how a network can influence the firm's conduct and performance. The article states that the nature of competition might be affected by the network structure, network membership and tie modality. Moreover, a network might break down or build entry barriers in an intra-industry structure. A network can be seen as a resource in itself, resulting in access to other firm's resources and capabilities (Gulati *et al.* 2000). The networks can also be able to reduce contracting and coordination costs, enhance innovation and contribute to firm survival (Gulati *et al.* 2000; Ahuja, G. 2000; Uzzi, B. 1996). However, the network also might have some constraints evolving from unproductive relationships; the lock in, lock out effects and learning races (Gulati *et al.* 2000).

The effect of networks has also been central in literature concerning industrial networks. Harrison *et al.* (2010) argued that the network(s) an organization is embedded in, has implications for its actions, and thereby the performance of firms. This was previously supported by Håkansson (1987), arguing that a firm's relationships "are one of the most valuable resources that a company possesses". Through a relationship, firms may gain from both direct and indirect benefits such as new knowledge and market access; this means a unique access to new relations, organizations, resources and competencies (Håkansson & Snehota, 1995). Ford *et al.* (1998) argue that a company's network position is within the boundary of "its relationships and the activity links, resource ties and actor bonds that arise from them". The position might have an effect on the opportunities the network can offer, in example, Gadde *et al.* (2003) suggests that companies should avoid too self-centred perspectives in a network because it is under the process of continuous combination and recombination between business units that new resource dimensions are identified and further developed.

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### ***2.3 Strategizing in Networks***

As the last section shows, a network can both enhance and restrict opportunities. This means that companies should consider strategizing on the topic of how to manage in a network setting (Harrison 2010). According to Håkansson and Ford (2002), strategizing in networks involve “the task of identifying the scope for actions, within the existing and potential relationships about operating effectively with others within the internal and external constraints that limit that scope”. Ritter et al. (2004) argues that firms are continuously involved in the managerial operations of its network, and through their actions the structure of the network and performance of firms are developed. In an industrial network perspective, networking actions are related to managing in networks and not the managing of networks (Harrison et al., 2010; Håkansson and Ford 2002).

Håkaanson and Ford (2002) explore three paradoxes in business networks that have managerial implications. In addition, Gadde et al. (2003) used these paradoxes to explore strategizing issues within a network. The first paradox concerns the constraints that might inflict the firm when it is interacting and creating relationship. A strategic issue may be that a company needs to identify and establish appropriate levels of involvement that is necessary with the individual partners (Gadde et al., 2003).

Relationships provide the opportunity for the company to influence others, but the same relationships are also a force for others to influence the company and the strategic action taken, stem from this relationship (Håkaanson and Ford 2002). The second paradox is that the company itself is the outcome of these relationships. According to Gadde et al. (2003), the company needs to balance between being influenced and influence, in order to achieve the desired interdependency with its different counterparts. The third paradox stems from the extent of control and co-operation within a network. Companies try to control the network they are part of. However, too much control may limit innovation within the network (Håkansson and Ford 2002), as the network becomes a hierarchy (Gadde et al., 2003). Hence, the strategic issue for a company is to identify the level of control that is most desired and suitable for their position (Gadde et al., 2003). The management should encourage a continuous understanding of the

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network for all participants, while at the same time also aim for control and modify its own and others relationships (Håkaanson and Ford 2002).

The two last paradoxes point out that “managers do deliberate actions in order to mobilize from their existing network position” (Harrison and Prenkert 2009). Harrison et al. (2010) explore these paradoxes to suggest five approaches of deliberate strategizing initiatives firms may implement with various types of counterparts, at different point in time, within a business network. The five different strategies concern the involvement of the key counterpart of the focal firm. The strategies are stretching from no involvement, to a highly involved counterparts expected to take part in strategizing processes by developing visions and plans that fits with the focal firm. This implies that firms might strategize differently in order to manage in their networks.

#### ***2.4 Network Capabilities***

In the previous literature, many scholars have described a company’s network competence as the same as network capabilities (Äyväri and Möller 2008). Ritter (1999) focused on the degree of network capabilities, defining it as the degree of network management task execution and the degree of network management qualification possessed by the people handling a company’s relationships. A high degree of task execution is divided in two; (1) *the relationship specific tasks* involve having a high degree of initiation ability, exchange activity skills and coordination skills. (2) *The cross- relational tasks* include the skills of planning, organizing, staffing and controlling activities. Further, a high degree of network management qualifications can also be divided into two types of skills; (1) *the specialist skills* include technical-, economic-, and legal- skills as well as network knowledge and experiential knowledge. In this type of skills, the experiential knowledge is argued to be of particular importance, enabling an ability to use previous experience with partnerships to anticipate situations and select the correct action to perform (Ritter 1999). (2) *The social qualifications* can be described as the ability to perform useful, preferred behaviour in social settings. Important factors are communication ability, conflict management skills, sense of justice, cooperativeness and emotional stability. These skills are of special importance when individual interactions occur.



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The main points of these definitions was supported by Kale et al. (2002), when they described similar attributes like partner knowledge, internal communication, coordination and relational skills as the most important components of network capabilities. These factors were argued to complement each other, and the level of network capabilities should increase as these factors increase (Kale et Al 2002, Walter 2006). As indicated, most scholars agree on defining the network capability on an organizational level, and that the development of a network capability is experience based, resulting from experiences from previous network relationships (Äyväri and Möller 2008). In order to simplify the explanation, Äyväri and Möller (2008) adapted a model by Grant, viewing the organizational network capability (ONC) as “the sum” or the combination of lower level capabilities and skill sets like individual and group skills (Äyväri and Möller 2008).

#### *2.4.1 The Importance of Network Capabilities*

Foss (1990), describes the importance of network capabilities by explaining how a firm might learn new capabilities from interaction with their network. These capabilities include in example collective learning, which is proven valuable by the VRIN framework from RBV (Barney 1991). He further argues that the competitive advantage of a firm may be sustained by interaction effects between the capabilities within the firm, and the common capabilities of the network. The importance of how to manage partnerships was further supported by Anand and Khanna (2000). They argued that firms should learn to manage their partnerships in order to handle contingencies resulting from personal, cultural and organizational attributes. More performance effects were measured in an empirical study by Walter (2006), confirming that network capabilities affected performance in sales growth, sales per employee, profit attainment, perceived customer relationship quality, realized competitive advantages, and long-term survival.

Following this, one can argue that a firms network is of great importance for their performance and competitive advantage. This means that the development of skills to develop and handle a favourable network might affect the profitability of the firm. By this, many scholars argue that a network capability can be seen as a core competence of the firm(s). This means that companies must invest in network

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competencies to gain competitive advantage (Ritter 1999). Ritter (1999) argued that the importance of network capabilities for a company's corporate success could be derived from the interest of applying technologies available by interorganizational relationships.

Äyväri and Möller wrote a critical review on previous literature, developing a framework of network capabilities. According to the authors, the previous literature raise several questions regarding the existence and development of network capabilities (Äyväri and Möller 2008), and they also encourage more attention to the problem setting of creation and emergence of network capabilities.

### ***2.5 Complex Projects***

The need for network capabilities might be visible in a complex project as companies operating in this setting may require interorganizational collaborations to finalize their projects (Scott et al., 2011; Pitsi et al., 2003). The complexity of a project can be defined as “a system in terms of the number of variety of components and interdependencies among them” (Davies and Mackenzie 2014).

Davies and Mackenzie (2014) showed that organizations tend to create “system of systems” when dealing with complex projects at two levels: *system integration* and *meta system integration*. The systems integrator “coordinates the network of organizations involved in the phase of design, construction, integration testing, commissioning and handover of a fully operational system” (Davies and Mackenzie 2014). The meta system integration establish standardized program management and planning is perceived to meet deadlines ahead of time. This requires highly structure on the control processes of the firm. Moreover, it allows the collaboration between other parties within the project to identify system-wide solutions in an earlier stage that makes the integration process more efficient.

Davies and Mackenzie (2014) point out that there are little or no focus on issues regarding the level of organizational and managerial capabilities required in a complex project. Davies and Brady (2015) introduced the concept of project capabilities as a necessary ability within managerial knowledge, experience and skills a single firm should gain in order to establish, coordinate and execute projects. Complex projects require participants to be able to deal with both

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predictable and known risks, whilst at the same time having the flexibility to adjust plans and modify routines when conditions change (Davies and Brady 2015).

### **3. Research Design and Methodology**

This section will give a thorough description of how we intend to handle our research process. An explanation of the design and methods chosen to perform this study will be given and justified. Moreover, a discussion of reliability and validity of our research will also be provided in order to outline our focus on the quality of the study.

#### ***3.1 Research Design***

The research design will be based on a single case study of Avantor. Case studies emphasize the rich, real-world context, in which phenomena occur (Eisenhardt and Graebner, 2007; Siggelkow 2007). As we want to gain a detailed view of Avantor's network capabilities in order to answer the research question, a qualitative view seemed advantageous (Yin, 2003). The qualitative approach will result in an inductive view of the relationship between theory and research, which means that theory will be generated out of the information we receive from the case (Bryman & Bell, 2011, p. 386).

##### ***3.1.1 The Case***

This study will be concerned around the case of Avantor, a property development company located in Oslo. Ever since 1994, their focus has been the development of the district, Nydalen (Avantor, 2015). The project of Nydalen can be considered as a complex project, as the development of the Nydalen area involves working together with several actors on more than 550 000 square meters in building-projects and major modifications. Therefore, the network capabilities developed by Avantor in this setting are of high interest. This case will emphasize the importance of networks, as Avantor's network(s) and inter-organizational relationships are required in order to complete their projects. Avantor states that their core activity is to be a preferred property developer, resulting in a presumably specialty of handling relations, networks and complex projects. Avantor seems like a company which is careful by whom they are "marrying" in the industry, and this results in a continuously change and development in their network, making the company highly relevant for our study.

The purpose of this research is to investigate how firms develop and sustain network capabilities, and which advantages this will bring. Our study will investigate Avantor's activity and explore the wide range of projects executed by the company. The case study enables us to examine and perform an intensive analysis of the research topic, on the setting of Avantor and how they manage and strategize in their networks. The research design will allow us insights in the field of Avantor's employees which again allow us to explore on a real-life setting. We want to gain knowledge on how Avantor achieves network capabilities by handling and developing their networks in complex projects, and how this capability can lead to a competitive advantage. Hopefully, interviews with employees of Avantor will give us an understanding of several topics, such as: How do they strategize their projects? What kind of inter-organizational relationships they consider to be most important? And if and why they are a preferred partner in the industry?

The level of the analysis is the organization it-self. However, our study will also explore organizations and stakeholders within the business network of Avantor, in order to investigate how these network capabilities are handled. The study involves capturing and mapping the development of network capabilities and the advantages these has created for Avantor. Our study will have some elements of a longitudinal design (Bryman & Bell, 2011, p. 57). By this, we are able to investigate and provide data on the mechanisms and processes on changes that have been created in Avantor's network over time.

### ***3.2 Research Method***

This study will follow a research strategy of qualitative approach through the methods of participant observation and semi-structured interviews of Avantor's employees and other highly knowledgeable participants in the network. This is to include a more diverse perspective of the case (Eisenhardt and Graebner. 2007). However, a challenge might be to get contact with all preferable participants. This research method is chosen to get first hand information from interviews, as well as an involvement in the day-to-day running of Avantor. This will provide us with an understanding of the company from an in-siders point of view (Bryman and Bell 2011). Furthermore, we want to explore secondary sources such as company

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documents from previous years, annual reports, mission statements, websites, press releases, archive materials, and company regulations.

### *3.2.1 Interview*

An interview guide will be developed. This will contain the questions we plan to ask, a map of which organizations within the network we plan to contact, with Avantor as the main target. An extra note of interviews will be included if necessary. All of our semi-structured interviews will start with an introduction of our study, in order to provide a professional setting. Further, we will ask the interviewee questions regarding his/her position and background in the company. This will provide us an overview of where the individual is situated in the hierarchy and provide a warm atmosphere for further questions. The interview objects outside of Avantor will be asked questions primarily related to their relations to Avantor. By this we are able to get insight on Avantor's position in the network and gain insights on Avantor's contribution from both a horizontal and vertical level.

A challenge will be to structure the interview questions. We desire flexibility to the answers, as this flexibility might contribute in revealing the true perspective of the interviewee. Thus, we will mainly ask open questions and avoid questions that provide only yes/no answers. If we note something important surfacing after the conduction of some interviews, we can alter the questions to fit this direction. One main disadvantage of open questions is that it could be time consuming; in making the right questions, conducting the interviews and in coding the answers in a favourable way. We will plan the interviews to last from 60-90 minutes. The set of questions do not need to be the same for all interviewees, as the main objective in qualitative studies is getting rich, detailed answers (Bryman & Bell, 2011, p. 469). Additionally, according to code of ethics, the interviewee will be informed that the interview will be recorded and transcribed, and make him/her aware that the information will solely be used for the purpose of the thesis.

Interviewing executives will give us a view of how the organization is viewed from the top. Further, we will use our access to the executives to reach out to managers on lower levels to not only get the top-down view on what factors that are vital regarding the complex project of constructions in the Nydalen area.

### *3.2.2 Data*

As mentioned above, the research will rely on qualitative data collected from interviews, observations and secondary data (company documents), as well as literature concerning the topic. Our interviews will be conducted on 6-10 executives from various functional areas and organizations of the network in which Avantor is embedded. By this we are able to get a wide and deep understanding of Avantor, as well as the various functional perspectives such as, construction and property development.

The interviews will be recorded and transcribed. Each interview will be coded to discover the most relevant points. Recording will be beneficial as we have to be highly focused on what is being said and follow up on interesting points the interviewees touch upon (Bryman & Bell, 2011, p. 482). Planning in forehand on the location of the interview is important, as company offices are often busy workplaces. Finding a room which is quiet will reduce the likelihood of the recording being of low quality (Bryman and Bell, 2011). There are several risks related to a research project based on interviews and on single case study. However, since our supervisor Lena Bygballe provides us with access to her contacts, we feel confident that these issues will be of less significance. We are already planning a meeting with Avantor in the end of January, early February 2016.

Lastly, we aim to be invited to events, meetings or other happenings by Avantor that enable us to observe their daily activities in multiple settings. A participant observation of the company might provide us with valuable insights, such as “learning the native language” of the company and to be more flexible when interacting with the employees. This could hopefully be a door opener for our study to reach a deeper level of the research topic.

### ***3.3. Reliability and Validity***

Adapting reliability and validity into a qualitative research are important features we need to consider in order to ensure the quality of our research. However, researchers within the qualitative field have argued that the quantitative methods of evaluating a research project, validity and reliability are not directly applicable for a qualitative research project (Bryman and Bell 2011). Guba and Lincoln

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(1989) proposed four criteria, which better reflected the qualitative research project (1) credibility, which parallels internal validity, (2) transferability, which parallels external validity (3) dependability, which parallels reliability, and (4) confirmability, which parallels objectivity.

### 3.3.1 Reliability

The term of *external reliability*, notes whether a study is replicable. As for our study, we will conduct interviews of 6-10 managers of Avantor and within the network of Avantor. This is possible for other researchers, but it will be impossible to achieve the identical social setting as ours. In addition, by the time other researchers replicate the study, the same managers that were interviewed might be replaced, and the new managers may respond to the questions differently. Therefore, an exact replication of the study seems impossible.

In qualitative studies, the effort lies in maximizing the level of *dependability* that covers the criterion of *trustworthiness* as an important issue to gain *credibility* for the study. In order to maintain a high level of dependability, we will make sure to describe the settings during data gathering and how this ever-changing context affected the way the research project was conducted. Gupa and Lincoln (1989) suggest that researchers should adopt an auditing approach in order to achieve dependability, that is, making sure that all data gathered are kept, and are of accessible manner for others. Accordingly, recording the interviews conducted will increase the *dependability* of the study (LeCompte & Goetz, 1982). Yet, one must clarify with the participants of the study whether the data should be classified or not. An approval from the companies might provide the opportunity to further explore and evaluate the quality of our findings and results. The requirements of internal reliability are also met, as there are two researchers taking part in this project.

### 3.3.2 Validity

The requirements of validity seek to prove the accuracy of the scientific findings in our study, which will result in credibility. This is linked to the *internal validity* of our project, which concerns our ability to be consistent in formulating conclusions and extensions of theory from our information (LeCompte & Goetz, 1982). It is important for us to agree on the findings, discuss the observation and match the observations with the theoretical ideas (Bryman and Bell, 2011). Our

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study is based on the theories of network, complex projects and network capabilities presented by scholars. The general agreement concerning these theories is provided in the theoretical framework section above. By matching our findings with this framework, we will achieve internal validity. Another important criteria linked to internal validity is the *respondent validation*. Our research needs to be carried out through good practice and the findings need to be correctly understood (Bryman and Bell, 2011). The criteria on *external validity* reflect on whether the findings can be generalized and if the results of the research can be transferred or not. As our study basically explores how Avantor achieved its network capabilities, the concept of transferability is somewhat limited. However, we will try to give a thick description (Geertz 1973) of our findings, to provide rich accounts of details of the culture of Avantor. In the end this might result in a possible transferability.

Complete objectivity is impossible in a business research (Bryman and Bell, 2011), however the highest level of *confirmability* is our goal. That is, not to let our personal values nor perspectives affect the study conduct. To avoid this bias we believe that with the guidance from our supervisor, we will ensure that it is done in an understandable, correct way. In the end, we aim to make a framework of how a firm build and sustain network capabilities. This development of the theory will hopefully be a motivation and inspiration for future research (Siggelkow, 2007).

#### **4. Project Management**

This research project will be conducted as a master thesis at Handelshøyskolen BI during the spring semester in 2016. It will be a full-time project. The pre-phase of the thesis, involved to choose a research area, and formulate a temporary research question. In order to choose a supervisor, we evaluated and looked for the best supervisors related to the research area. The mentioned steps are already completed, resulting in the research question described in the intro, and Lena Bygballe as our supervisor. After proposing the project and getting an approval from our supervisor, we created a short proposal for the master thesis. The paper, with a signature from the associate dean of major in strategy was handed in to the exam office in the beginning of May 2015.



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In January 2016, the research strategy, design and methods were selected as described above. The Gantt chart illustrates the beginning- and end dates of the most important features of the master thesis project (Appendix). First, the preliminary report will be handed in the 15<sup>th</sup> of January. In the second part of the research process, we will negotiate access with Avantor, and contact the possible interview objects. The availability and opportunities for interviews will be clarified, and by the end of February, the dates for data collection will be settled. All data will be collected from interviews and observations during the end of February and mid March.

Third, the data from interviews and observations will be coded and combined with the literature in hand, and in April, all the data will be combined and available. In order to provide the project with the most relevant and interesting data, a close and continuously contact with the supervisor will be important. Then she has the opportunity to guide us in which data to use, and propose changes, or a new round of data collection, making the project an iterative process.

In the last part of the paper, we will formulate our findings, and possibly develop a framework for the development of network capabilities. Areas for further research will be evaluated and the limitations of our paper will be discussed. The first draft of the thesis will be written in May. This draft will be revised and corrected, resulting in a second draft by June 2016. In July and August, we will write the final draft of the master thesis.

#### ***4.1 Management***

The research will be conducted by two students at the Master of Science in Business program majoring in strategy. A supervisor will assist and guide the students with knowledge within network theory, network capabilities and theory concerning complex projects. In order to make sure of progress, we will meet every week, while try to meet our supervisor at least once a month.

### **5. Preliminary Findings and Limitations**

This preliminary report encouraged us to have an early development of the method and design for our master thesis. The findings suggest that the best way to

conduct the research is to do qualitative research, with a case study as the main source of data. Further, the preliminary report provides useful literature concerning the relevant topics, which will be beneficial in the process of writing the master thesis.

As this is a master thesis, we have limited time and resources. The study is limited to a single case, and more research might be needed in order to understand how network capabilities are developed and sustained.

As mentioned in the third part of the paper, qualitative research represents some challenges. However, as we are aware of the pitfalls, we hope to be able to develop a thesis, which can encourage researchers to further study the topic of network capabilities.

Activity/Date	January 15.	February 15.	March 15.	April 15.	May 15.	June 15.	July 15.	August 15.	September 01.
Identify research area									
Formulate research question									
Approval from supervisor									
Strategy design and select methods									
Search for relevant literature									
Theory/literature foundation									
Preliminary report									
<b>Project</b>									
Case study/negotiate access									
Data collection									
Coding data									
<b>Report</b>									
Combining data									
Write first draft									
Write second draft									
Write final draft									
Hand in data									

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