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Legitimacy Building in a Whole Supply Network during its Formation Phase

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Abstract

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Keywords: legitimacy, legitimacy building, legitimacy-building process, inter-organizational network, whole network, supply network, network formation phase, case study

Legitimacy is essential for an inter-organizational network's willingness to supply resources. This study focuses on the legitimacy-building process in a whole supply network in its early formation phase. The main objective of this study is to increase understanding on how the network actors, i.e. the organizations participating in the network, build legitimacy during the formation of a whole supply network. Whole networks, i.e. consciously created, goal-directed networks with a separate identity and collective actions, are considered to be the future of organizing in a society of networks. Whole supply networks are whole networks that operate in the manufacturing of products. Legitimacy building in a whole network is researched via the manifestations of dimensions, three in the pre-network and four in the network formation phases. In addition, the contingencies that exist in legitimacy building during the formation of a whole supply network are identified.

The legitimacy-building process was researched in the case of one whole supply network of 20–26 Finnish maritime organizations in a three-year networking project using pragmatic research philosophy. The mainly qualitative empirical research material was collected by means of interviewing the network actors and observing the network's events and their respective documentation. The manifestations of the legitimacy-building dimensions as well as the contingencies were analysed at the inter-organizational network level.

The research results show that especially the network's strategic intents and communicating them to the network organizations are an essential dimension in the legitimacy building of a whole network during its formation. It is particularly noticeable that the strategic intents of a whole network can be multiple, may even overlap and are achieved asynchronously and, if unclear, they may cause issues in network legitimacy building.

This dissertation research makes several theoretical and practical contributions. From the viewpoint of the emerging network theory of whole networks, the results clarify the dimensions of legitimacy building in the formation phase, specifically in whole supply networks. Additionally, it gives new information on legitimacy building in whole networks in completely unexplored pre-network circumstances. Furthermore, the results add to the discussion of supply network archetypes and various contingencies, which affect the legitimacy building of a whole network during its formation. Moreover, there are practical implications for both organization leaders

contemplating network collaboration and also those managing it. First of all, the pre-conditions of legitimacy building shed a lot of light on the readiness of the network for collaboration, and thus the network's legitimacy building. Secondly, the four dimensions of legitimacy building can be used as a general level roadmap for network legitimacy building. By investing in clarifying the strategic goals of the network, specifying a network structure that is suitable for achievement of the network's goals, supporting the network's interaction, and as a result, enabling the creation of the network's own identity, the ability of a network to build both internal and external legitimacy is enhanced.

Tiivistelmä

TAMPEREEN TEKNILLINEN YLIOPISTO
Tuotantotalouden ja tietojohtamisen laboratorio
Suominen, Anu. 2017. ”Legitimacy Building in a Whole Supply Network during its Formation Phase”

Avainsanat: legitimiteetti, legitimiteetin rakentuminen, organisaatioverkosto, toimitusverkosto, kokonainen verkosto, verkoston muodostumisvaihe, case-tutkimus

Organisaatioverkoston legitimiteetti eli yleistetty käsitys verkoston toiminnan, toimintojen ja rakenteen suotavuudesta ja tarkoituksenmukaisuudesta on tärkeää sen organisaatioiden halukkuudelle toimittaa resursseja. Tämä tutkimus keskittyy legitimiteetin rakentumiseen kokonaisen toimitusverkoston muodostumisvaiheessa. Tarkoituksellisesti muodostettuja, päämääräohjattuja, oman identiteetin ja kollektiivista toimintaa omaavia ns. kokonaisia verkostoja (engl. whole network) pidetään tulevaisuuden organisoitumismuotona verkostoituneessa yhteiskunnassa. Kokonaiset toimitusverkostot ovat erityisesti tuotteiden valmistuksessa toimivia kokonaisia verkostoja. Tutkimuksen tavoitteena on lisätä ymmärrystä siitä, miten verkoston toimijat rakentavat legitimiteettiä kokonaisen toimitusverkoston muodostumisvaiheessa. Legitimiteetin rakentumista tarkastellaan verkoston esiverkostoitumisvaiheen kolmen ja muodostumisvaiheen neljän dimension ilmenemisellä. Lisäksi tutkimuksessa tunnistetaan verkoston muodostumisvaiheen legitimiteetin rakentumisessa ilmeneviä kontingenssitekijöitä.

Pragmaattisen tutkimuksen tutkimusstrategiana käytettiin tapaustutkimusta kolmivuotisessa 20–26 meriteollisuusorganisaation verkostoitumisprojektissa. Pääsääntöisesti laadullinen empiirinen tutkimusaineisto verkoston legitimiteetin rakentumisesta kerättiin verkoston toimijoiden eli siihen osallistuvien organisaatioiden näkökulmasta haastatteluin ja havainnoimalla verkoston vuorovaikutustapahtumia ja niihin liittyviä dokumentaatioita. Verkoston legitimiteetin rakentumisen dimensioita sekä tunnistettuja kontingenssitekijöitä analysoitiin organisaatioverkostotasolla.

Tutkimuksen tulokset osoittavat, että erityisesti strategisen päämäärän tai päämäärien määrittäminen ja kommunikointi verkosto-organisaatioille on tärkeä dimensio kokonaisen verkoston legitimiteetin rakentumiselle verkoston muodostumisvaiheessa. Erityisesti huomattavaa on, että verkoston strategisia päämääriä voi olla useita, ne voivat olla päällekkäisiä ja niiden saavuttaminen voi olla ajan suhteen asynkronista. Verkoston strategisten päämäärien ollessa epäselviä, voi verkoston legitimiteetin rakentuminen vaikeutua.

Tutkimuslöydökset ovat sekä teoreettisia että käytännöllisiä. Tutkimus selkeyttää kehittymässä olevaa kokonaisten verkostoiden teoriaa verkoston muodostumisvaiheen legitimiteetin rakentumisen dimensioiden osalta, erityisesti strategisten päämäärien merkitystä. Lisäksi tulokset tuovat uutta tietoa kokonaisten verkostoiden legitimiteetin rakentumisesta aiempiin tutkimuksiin

verrattuna uudenlaisessa esiverkostoitumisvaiheessa, verkoston muodostamisvaiheessa vaikuttavista kontingenssitekijöistä, sekä toimitusverkostoiden arkkityypeistä. Tutkimuksen perusteella ymmärretään paremmin käytännön haasteita, joita verkostoja muodostavat ja johtavat organisaatiojohtajat työssään kohtaavat. Aiempiin tutkimuksiin pohjaten tutkimus tarjoaa myös yleisen tason tiekartan verkoston legitimiteetin rakentamiselle, sillä jo ymmärrys esiverkostoitumisvaiheen tilanteesta valaisee alkuvalmiuksia, joita suunnitellulla verkostolla on legitimiteetin rakentumiselle. Lisäksi panostamalla verkoston muodostumisvaiheen neljään dimensioon: verkoston eri strategisten päämäärien kirkastamiseen, päämäärän toteuttamisen suhteen toimivaan verkostorakenteen määritykseen, verkoston vuorovaikutuksen tukemiseen ja näiden avulla verkoston oman identiteetin luomiseen, mahdollistuvat verkoston valmiudet legitimiteettinsä paitsi sisäiselle, myös ulkoiselle rakentumiselle.

Preface

"Tietä käyden tien on vanki, vapaa on vain umpihanki" Aaro Hellakoski, Huojuvat keulat 1947
On the road by track you go, the freedom lies in unbroken snow (Freely translated)

As much as I love skiing – although the skis have to have enough grip, I also love writing. And writing my thesis on networks and their legitimacy has been a journey unlike anything else in my life, particularly my working life. Through the icy weather and snowbanks of the past decade, the last three years have been the best as a member of academia. The journey has manifested for me as personal growth of resiliency and focus. Even as a dream vision of my future, as working with inter-organizational networks is one type of 'unbroken snow', full of potential and possibilities.

The actual analysis work of this thesis started in 2014; first under the supervision of university lecturer Rainer Breite with his kind and generous invitation to join his research team on the REBUS program. Two and half years later, this monograph was completed under the supervision of Professor Marko Seppänen, with the help of his determined outlook, along with his trustworthy and committed leadership. All through the process Professor Seppänen has expressed such faith in me and respect for my choices in a manner that reflects his leading by example.

I wish to thank Professor Veli Matti Virolainen, Lappeenranta University of Technology, and Associate Professor Ola Edvin Vie of Norwegian University of Science and Technology, NTNU, for examining my dissertation. I appreciate the time and effort they used to familiarise themselves with my manuscript and give their insightful and valuable comments on it.

I want to thank the organizations that participated in the networking project, thus allowing the data collection in an idiosyncratic whole network case. To maintain anonymity, I will not name the organizations or the persons.

Additionally, I would like to express my deep gratitude to Kaj U. Koskinen, Docent Emeritus, Sari Mäenpää D.Sc. and Professor Miia Martinsuo for their perceptive, yet encouraging comments, which helped to mould the preliminary manuscript into its final form. In addition, I want to thank all the researchers and teachers in the Business Ecosystems, Networks and Innovation (BENI) research team, particularly Adjunct

Professor Heli Aramo-Immonen, whose support has been indispensable throughout the years.

My thanks go to the organizations that have funded my work during the past years: Suomen Kulttuurirahasto (the Finnish Cultural Foundation), Satakunnan korkeakoulusäätiö (the Satakunta University Foundation), Satakunnan korkean teknologian säätiö (the High Technology Foundation of Satakunta). In addition, I wish to thank the REBUS – Towards relational business networks – program of DIMECC, Digital, Internet, Materials & Engineering Co-Creation, which enabled the finishing of this dissertation work.

I also wish to thank Sue Pearson and Mike Jones from Pelc Southbank Languages for proofreading the English language of the dissertation.

I wish to thank my family for their understanding of my constant preoccupied state. My husband Sakke for giving me the opportunity to pursue my professional dreams; and especially our sons Lassi and Antti, who both in their studies and free time have shown me what can be accomplished with focus, determination and love for what you are doing, in their case sport. I love you all to the moon and back. I want to acknowledge all the support our family have been given throughout my studies from my mother Riitta Lehtinen and my parents-in-law Sirkka and Pertti Suominen and give them my heartfelt thanks.

As this dissertation is about networks, there are also networks that have a special and significant meaning in my life. These networks have provided support, conversations, laughter, sing and dance, travels, the much needed R&R – and love. The extended family of Mikis, the best place in the world, for all the holidays and trips near and far. All the current and 'outcast' sisters of LC-75 Kauttua: it has been a privilege to be a part of these ladies for 17 years, not forgetting their significant others. The members of exOTiC, who have turned jointly endured hardships into beautiful friendships. Puntti-Puumat, 'Gym Cougars', with whom we occasionally exercise, but much more often nurture our mental health. In addition, to all the friends we travel and spend our free time with, particularly the extended Köyliö and JVU families: I am so grateful to each and every one of you - you keep me grounded.

Mikolanmäki Kauttua, July 31st, 2017

Anu Suominen

List of figures

List of tables

Table of Contents

1 Introduction

This dissertation concerns the legitimacy building of whole supply networks in their formation. In this dissertation, based on Suchman's (1995) view[1], the definition of legitimacy in the network context is *"a generalized perception that the actions, activities, and structure of a network are desirable and appropriate"* (Human and Provan, 2000, p. 328). Legitimation is an initiated process (Zimmerman and Zeitz, 2002), which has three sub-processes of gaining or building, maintaining and repairing legitimacy (Suchman, 1995). Furthermore, legitimacy building in networks is a type of legitimation, which encompasses a process or processes (Zimmerman and Zeitz, 2002) of conscious acts of justification (Kumar and Das, 2007) of and within a network, such as negotiations and agreeing, in order to gain legitimacy, i.e. social approval.

The development is towards a society of whole networks (Raab and Kenis, 2009). A whole supply network means a network, which is a *"consciously created group of three or more autonomous but interdependent organizations that strive to achieve a common goal and jointly produce an output"* (Raab and Kenis, 2009, p. 198), that is generated to engage *"in manufacturing and assembly of parts to create a finished product"* (Choi and Hong, 2002, p. 469). This raises the question of how scarce resources could be used sensibly in network development (Human and Provan, 2000). A quarter of a century ago, Sharma (1991) stated that *"without legitimacy, the network will not be willing to supply resources"* (Gebert-Persson and Káptalan-Nagy, 2016, p. 302). Therefore, for the resource supply to take place, it is vital for whole networks to build legitimacy within their network

[1]Suchman defines legitimacy *as "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions"* (Suchman, 1995, p. 574).

early on during their formation. Legitimacy building is particularly essential for whole supply networks for their joint production of an output in manufacturing. This dissertation aims to shed light on how legitimacy building should be carried out in whole supply networks in their formation phase by using the scarce resources sensibly.

This introductory chapter outlines the study by introducing the main topics of interest, the objectives of the study and the structure of the dissertation. The chapter starts by presenting the background and motivation of the research with an overview of the key concepts and the linkage to prior research. Next, the research objectives are presented, outlining the focus of the study. Additionally, the scope and delimitations defining the boundaries of the study are provided. After that, there is an introduction to the industry under study, the Finnish maritime industry, and its tradition of networking. The end of the introductory chapter presents an illustration of the dissertation's structure as an overview of the entire study.

1.1 Background and motivation

This dissertation studies how legitimacy building is carried out in whole supply networks in their formation phase. Various processes contribute to the success and dissolution of whole networks in their early phases, including legitimation (Human and Provan, 2000), and there are also contingencies that affect the outcome (Ebers and Oerlemans, 2016; Järvensivu and Möller, 2009). In this dissertation, contingencies are factors that facilitate and constrain the full completion of network formation phases (Ebers, 1997). Therefore, the rationale behind this research was to understand the contribution of legitimation, particularly legitimacy building, and contingencies affecting the outcomes of success and dissolution of whole networks in their early phases. Networks require legitimacy for the network to be willing to supply resources (Gebert-Persson and Káptalan-Nagy, 2016; Sharma, 1991). In particular, whole supply networks need legitimacy in order for the network to be able to supply resources to achieve the common goal and produce an output generated in manufacturing and assembly of parts to create a finished product. Understanding the mechanisms for legitimacy building in whole supply networks is essential for industrial companies, as the trend is towards a society of whole networks (Raab and Kenis, 2009). On the other hand, scarce resources should be used sensibly in network development (Human and Provan, 2000), specifically in the formation phase so as to ensure the continuity and success of the network.

In the theoretical background, prior to comprehending the theory of legitimacy building in whole networks, the literature and concepts of networks are described. Next, the literature of legitimacy relevant to the dissertation is reviewed. On the one hand, despite the vast literature on inter-organizational entities (IOEs)[2], there are only a few studies of the evolution of whole networks (Provan et al., 2007). The studies of whole networks fall into two broad categories of findings: network properties and processes associated with whole networks, such as structure, development or evolution, and governance; and network outcomes, such as network failure (Provan et al., 2007). On the other hand, legitimacy, although widely researched in an organizational context, has not been the focal point of much research in the network context (Sonpar et al., 2010).

In the dissertation, the empirical study describes a special case in the Finnish maritime industry. In 2010–2013, 20–26 Finnish maritime organizations participated in a three-year networking project as a whole network. The network was formed intentionally for joint market entry into the new market of international upstream offshore sector, i.e. the vast oil and gas exploration and production units used at sea. The three-year case study researched legitimacy building in the early formation phase of this whole network.

The dissertation contributes primarily to the literature of whole supply networks, particularly their dynamics and outcomes of evolution in their legitimacy-building process in their early formation phase at the inter-organizational network level. Human and Provan (2000) state that the dynamics of evolution in networks emerging from previous business ties are likely to be different than the dynamics in formally constructed networks organized from scratch and other multilateral networks, in which trust, cooperation, other aspects of identification and commitment-based embedded ties are not likely to be present. Therefore, the dynamics of evolution of such formally constructed and organized networks should be researched. Also, Provan et al. (2007) state that whole networks, analysed at the inter-organizational network level, have not been thoroughly researched, thus understanding of them is marginal. They emphasize the need to comprehend the operation and best structuring and management of whole networks, and their resulting outcomes. This comprehension is essential since whole networks have significance as a macro-level social issue in business, public management and health care services (Provan et al., 2007). Additionally, Raab and Kenis (2009)

[2]In this dissertation, inter-organizational entities (IOE), e.g. alliances, coalitions, clusters, partnerships, strategic alliances, strategic business networks, 'business nets' and other networks (Cropper et al., 2009; Järvensivu and Möller, 2009; Provan et al., 2007) have inter-organizational relations (IOR) or relationships (IORs) with each other (Cropper et al., 2009).

stress the importance and need for building a theory of whole networks, underlining the use of networks as the units of analysis. Regarding legitimacy in networks, Human and Provan (2000) suggest further research based on the dimensions of the legitimacy of networks, i.e. network as a form, network as an entity and network as an interaction. Additionally, they encourage the study of legitimacy-building strategies in networks that have established the legitimacy of interaction and form prior to network formation.

Although legitimacy building in whole supply networks is the focus of this dissertation, it is suggested that the strategic intent dimension of legitimacy building and the dynamics of its coherence in particular be studied further. Additionally, membership of whole networks and its boundaries could benefit from further research.

1.2 Legitimacy building in formation of whole supply networks

The purpose of this sub-section is to position the literature of legitimacy building in whole supply networks amongst the vast literature of IOEs and legitimacy. In consequence, the discovered research gap is presented in the sub-section.

The network paradigm, a strategic organizational response to dynamic environmental pressures (Cravens et al., 1996), has yielded a vast literature regarding various IOEs (Cropper et al., 2009). Examples of IOEs that have been given are alliances, coalitions, clusters, partnerships, strategic alliances, strategic business networks, 'business nets' and networks (Cropper et al., 2009; Järvensivu and Möller, 2009; Provan et al., 2007). With no universally accepted definition, (Cropper et al., 2009) networks are viewed in two main ways: either as unmanageable emergent structures or with strategic orientation (Huuskonen and Kourula, 2012). This research is based on the latter. In accordance with the two main views on networks, network theorizing also has two approaches: 1) a serendipitous network without a collective identity and 2) a network as consciously created, goal-directed, with a separate identity and collective action (Raab and Kenis, 2009). This research is based on the latter. Therefore, in this research, networks, in general, are viewed according to a

conjoined definition of Jarillo (1988) [3] and Provan et al. (2008)[4]. Hence, *networks* in this dissertation are *a distinct set of three or more legally autonomous, yet related and recognized member organizations that aim at collaborative goal achievement of both the individual organizations and the entire network, while having some type of governance system.* Furthermore, *network formation* may be the *result of* a *deliberate, conscious act*, and networks formed in such a manner are called *whole networks*, which are the focus of this dissertation. This dissertation belongs to the area of industrial management, where the interest lies in networks that are involved in industrial operations, such as supply networks (Choi and Hong, 2002). However, there are only a few studies of the evolution of whole networks (Provan et al., 2007), falling into two broad categories of findings: network properties and processes associated with whole networks, such as structure, development or evolution, and governance; and network outcomes, such as network failure (Provan et al., 2007). Furthermore, there is a research gap and need for network theories, i.e. theories that explain the coming into being, functioning, effectiveness, governance and failure of whole networks (Raab and Kenis, 2009). Additionally, there is a need to find out how to use the scarce resources for network development in the best ways (Human and Provan, 2000).

Legitimacy is a concept of organizational sociology, and its strategic approach is based on Resource Dependency and Stakeholder theories (Sonpar et al., 2010). Resource Dependency (RDT) and Stakeholder theories are situated in the middle in a continuum of economic and behavioral theory paradigms explaining IORs, where Transaction Cost Economics (TCE) is the economic end and Institutional theory the behavioural end (Barringer and Harrison, 2000; Lowensberg, 2010). For legitimacy, it is inherent that it is a perception, although not necessarily experience-based, such as trust (Figure 1). Preceding trust, legitimacy is an evaluation of being worthy of trust, based on the norms, values, rules and regulations that exist within a specific context, such as a network (Gebert-Persson et al., 2011). Besides the connection to trust, legitimacy is also akin to, but distinct from, the concepts of reputation and prestige (Dacin et al., 2007). Legitimacy is a continuous variable of low or high values, a continuum (Zimmerman and Zeitz, 2002), which is both a state of collective judgment at any given time and a process that evolves during the essential interactions (Gebert-

[3]Strategic networks are *"long-term, purposeful arrangements among distinct but related for-profit organizations that allow those firms in them to gain or sustain competitive advantage vis-à-vis their competitors outside the network"* (Jarillo, 1988, p. 32). Jarillo also emphasizes the role of the "hub firm".

[4]Networks are *"groups of three or more legally autonomous organizations that work together collectively and collaboratively to try to achieve not only their own goals but also the collective goal of the network as a whole*" (Provan et al., 2008, p.122)

Persson and Káptalan-Nagy, 2016; Kumar and Das, 2007). Legitimacy depends on the organization's internal and *"external direct and indirect relationships within the business network context and the broader environment"*, and which *"can be analyzed at different levels: firm, relationship, business network context and aggregated"* (Gebert-Persson and Káptalan-Nagy, 2016, p. 305). Legitimation is an initiated process, which, when performed by strategic choice, is called strategic legitimation (Zimmerman and Zeitz, 2002). Suchman (1995) presents three views of legitimation: gaining or building legitimacy, maintaining legitimacy and repairing legitimacy, all having their own challenges. In this dissertation, the focus is limited to legitimacy building.

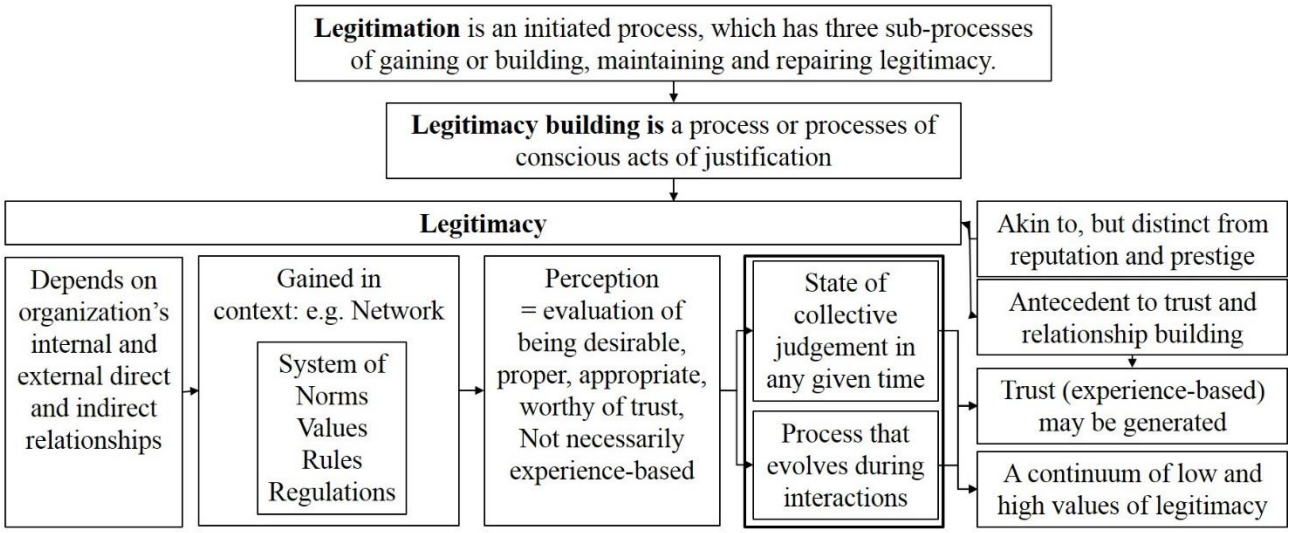

Figure 1. Legitimacy and legitimacy building as concepts

From a network perspective, legitimacy is required for the network's willingness to supply resources (Gebert-Persson and Káptalan-Nagy, 2016; Sharma, 1991). However, although vital for networks, particularly supply networks, and one of the concepts in organizational sociology that has received the most attention (Sonpar et al., 2010), legitimacy has not been studied much in a network context. In particular, there are only a few studies of legitimacy building in whole networks, besides those by Human and Provan (2000) and by van Raaij (2006), which studies have not considered the role of strategy at all or not very thoroughly. However, Valkokari (2015a) has addressed strategic intent together with a shared identity as two dimensions of network dynamics. Therefore, observing the prior research on legitimacy building in whole networks reveals an important, but unresearched area of network theory building, which also has an impact on sensible network development in practice. Therefore, there is a need to further develop network theories of legitimacy building, particularly in whole networks, that would explain the full or partial success or dissolution of those networks, thus

also providing new information on how to use scarce resources, such as public funding, for developing such consciously created, goal-directed, whole networks.

Figure 2 summarizes and portrays the discovered research gap at the intersection of network studies and research on legitimacy in networks. Firstly, little attention has been paid to intentionally developed networks or 'nets' (Möller and Svahn, 2003) and there are only a few studies of whole networks (Provan et al., 2007; Raab and Kenis, 2009). Secondly, there are only a few studies of legitimacy in networks (Sonpar et al., 2010). In Figure 2, this discovered research gap area is marked with a dashed quadrangle. The location of supply networks in the middle of the figure illustrates that they can be emergent structures or with strategic orientation; additionally, either with a collective identity or whole networks. Therefore, as the focus area of this dissertation is on a particular type of whole network, i.e. whole supply networks, the limitation of the focus area is marked with a smaller dotted quadrangle.

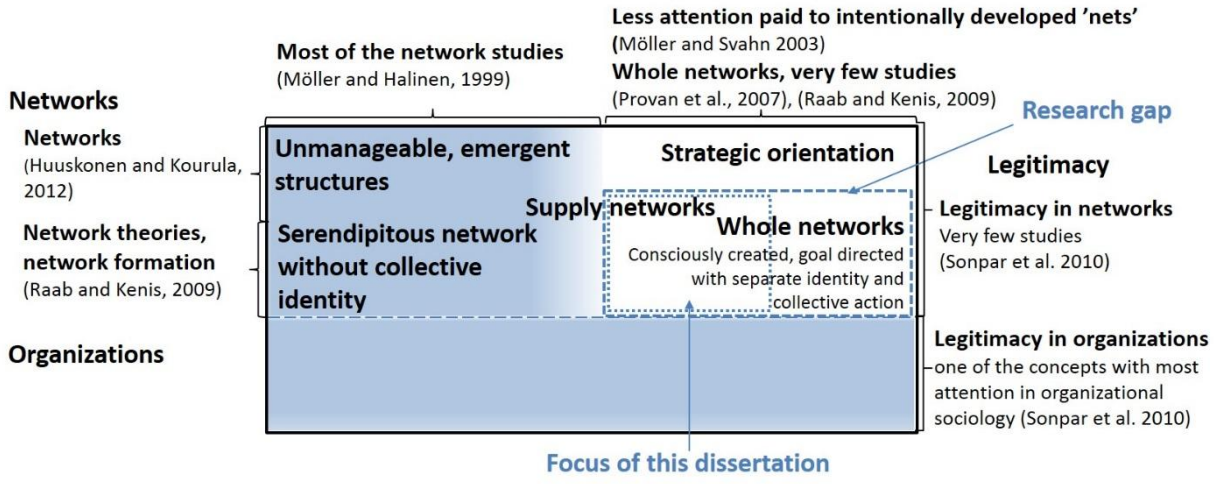

Figure 2. Research gap and the focus of the dissertation

The significance of this research subject is society-wide. Society has and is continuously facing the dynamic pressures of the environment (Cravens et al., 1996). Furthermore, Western societies especially are moving towards a society of whole networks (Raab and Kenis, 2009) Therefore, it is important to study and obtain new information on consciously created, goal-directed whole networks, their development, and the sensible use of the scarce resources needed for their development.

As will be shown in Chapter 2, the whole network development and the legitimacy in networks seem to be scarcely covered at all in previous empirical research. Consequently, this dissertation

observes legitimacy building in whole networks via legitimacy-building dimensions, as well as the contingencies present in the legitimacy building of whole networks. However, the research is limited to whole supply networks in the two phases of their early formation, i.e. the pre-network phase and the formation phase. Based on the literature review made for the theoretical background, the research gap is how to build legitimacy in whole networks by using scarce resources sensibly, in order for whole networks to succeed.

1.3 Research objectives

The dissertation aims to increase knowledge on how legitimacy building is carried out in a whole supply network during its formation. Theoretically, the dissertation aims to provide a framework for network legitimacy building for the two early phases of the formation process, the pre-network phase and the actual formation phase. The theoretical framework is built on the network theories of network legitimacy building and network dynamics. The framework is intended to evaluate the levels of the various legitimacy-building dimensions in those two early phases of the formation process. The framework also helps to increase understanding of the dimensions that need attention and resources for developing the achievement of network legitimacy.

The purpose of this dissertation is to investigate legitimacy building in a whole supply network during its formation from the viewpoint of the network actors, analysed at the inter-organizational network level. The network actors are the participating member organizations of the whole supply network. Therefore, the unit of analysis is the network as a whole, e.g. its strategies, governance, structure and events. The network actors, that is the participants of the networking project, i.e. the network organizations and their participating leaders, are considered as representative informants. However, the results of the network actors are conjoined to the network level. The process of legitimacy building is explored via the manifestation of legitimacy-building dimensions, i.e. how each dimension is manifested in the network formation. The manifestation may be, for example, at a high or low level of existence or the absence of influence for gaining legitimacy, such as the interest level of state legislators and public funding agencies.

Figure 3 portrays an overview of the research: its research substance, method, theory and context. The substance is the manifestation of network legitimacy-building dimensions in the pre-network and network formation phases. The theoretical framework is built on the network theories of

network legitimacy building and network dynamics. The method and context are a single case study of a Finnish maritime industry network aiming at joint market entry and participating in a three-year networking project.

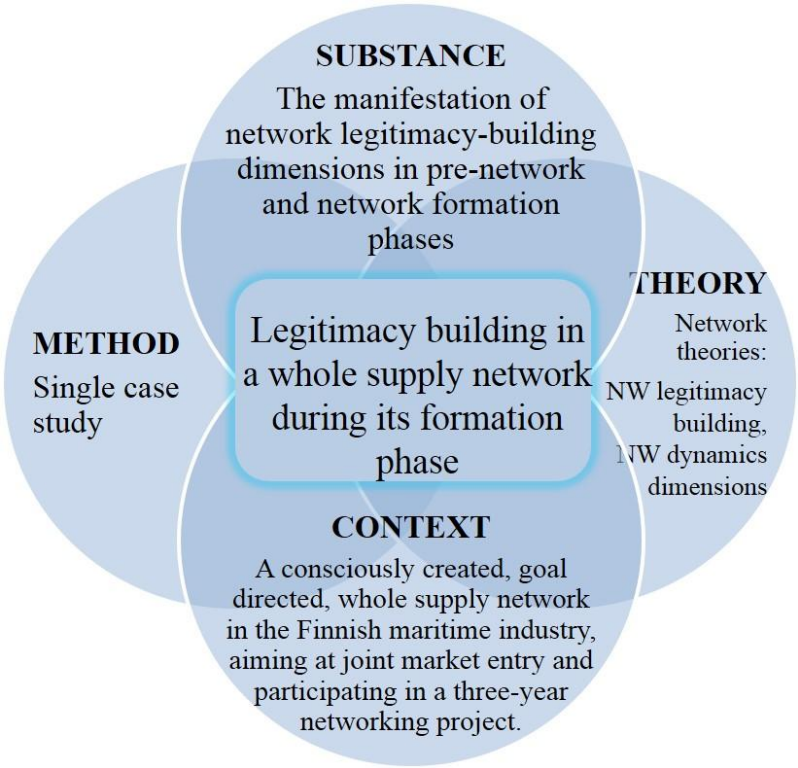

Figure 3. The substance, theory, method and context of the dissertation

Therefore, the first main research question can be framed as follows:

RQ1: How do network actors build legitimacy during the formation of a whole supply network?

As networks, particularly whole networks, never originate in a vacuum, the initial circumstances, including pre-network legitimacy, should be determined, since they may have significant impacts on the further development of the level of network legitimacy and the process of legitimacy building. Therefore, the research on legitimacy building in a whole supply network is first of all initiated by studying the manifestation of three legitimacy dimensions in the pre-network phase. The aim is to understand the circumstances that are present in the pre-network phase regarding the following three dimensions: 1) the climate for co-operation, 2) the legitimacy of the industry, and 3) the existence of preliminary support by potential key stakeholders, prior to the actual network formation phase in the case included in the theoretical framework. Therefore, the first sub-research question can be framed as follows:

RQ1a: How are the legitimacy-building dimensions of the pre-network phase (the climate for co-operation, the legitimacy of industry and the existence of preliminary support by potential key stakeholders) manifested in the legitimacy building of a whole supply network during its formation?

The legitimacy building is studied regarding the four dimensions of the network development phase defined in the theoretical framework. The interest in this part of the study is to understand how the four legitimacy-building dimensions presented in the theoretical framework are manifested in the legitimacy building of a whole supply network in its formation phase. The aim is to comprehend the circumstances that are present in the formation phase regarding these four dimensions of network legitimacy building in the network formation phase, namely, the network as a form, the network as a strategic intent, the network as an interaction, and the network as an entity. The second sub-research question can be framed as follows:

RQ1b: How are the four legitimacy-building dimensions (the network as a form, the network as a strategic intent, the network as an interaction and the network as an entity) manifested in the legitimacy building of a whole supply network during its formation?

The network type is then researched in relation to the Network as a form and Network as a strategic intent of legitimacy-building dimensions, and the supply network archetype or archetypes according to the typology of Pathak et al. (2014). The concern is to identify which network archetype or types the network represents when viewed via the not yet exhaustive model of Pathak et al. (2014) in a real life networking environment. The aim is to find out whether the network corresponds to the archetypes presented in the model and if so, which of the archetypes this case network represents. Therefore, the third research sub-question can be framed as follows:

RQ1c: Which supply network archetype or types are identified when the network legitimacy dimensions of the network as a form and the network as a strategic intent are viewed via the supply network typology of Pathak et al. (2014)?

In the environments of the networks, there are factors that Ebers (1997) calls contingencies, which facilitate and constrain the completion of each phase of network evolution. Such contingencies, e.g. public funding (Human and Provan, 2000), impact by enabling or hindering the legitimacy-building process of whole supply networks. Therefore, the objective is to discover the various contingencies affecting legitimacy building in the internal and external environment of whole supply networks. The aim is to find out which contingencies existed, either enabling, hindering or both, in the

legitimacy building in the formation of the whole supply network in question. Therefore, the second main research question can be framed as follows:

RQ2: Which contingencies are identified to exist in legitimacy building during the formation of a whole supply network?

The dissertation concentrates on the maritime industry, which has a long tradition of networking in Finland. The 20–26 maritime industry organizations were part of a three-year networking project aiming at jointly entering the markets for offshore oil and gas exploration and production structures. As an intentionally formed whole network, this case offers a descriptive research platform for studying whole supply networks.

To answer the research question and its sub-questions, it became necessary to study the literature on networks and their legitimation, particularly legitimacy building in networks. The research questions are answered in the discussion chapter. As mentioned above, the first main research question is answered through three sub-questions. The first sub-question offers an answer to the main research question by clarifying the situation of legitimacy building prior to network formation via the manifestations of the pre-network legitimacy-building dimensions. The second sub-question provides an answer to the main research question by portraying the situation of legitimacy building in the actual network formation phase via the manifestations of the legitimacy-building dimensions of the formation phase. The third sub-question offers an answer to the first main research question by identifying the supply network archetype or types that the supply network represents, according to the network typology by Pathak et al. (2014). The second main research question provides an answer by illustrating the discovered contingencies that are present during the network legitimacy building in the formation of a whole supply network. An empirical case study was carried out to explore the theoretical framework in a real life whole network case environment.

In order to address these questions both qualitative and quantitative measures were used. The research questions are answered by means of a interviews, observations, documents, notes of discussions, secondary data regarding reports of the maritime industry, and survey. A more detailed overview of the research design and methods is presented in Chapter 3.

1.4 Scope and delimitations

The delimitations are the characteristics that limit the scope and define the boundaries of this study. There are four different areas in which delimitations were made: 1) the empirical context of the research, 2) the theoretical framework, 3) the research philosophy and methods and 4) the unit of analysis.

Considering the research context, the setting of a supply network was chosen for studying legitimacy building in whole networks, i.e. consciously created, goal-directed networks. Legitimacy building is studied in the pre-network and network formation phases. The context is a Finnish maritime industry network aiming at joint market entry, participating in a three-year networking project. The Finnish maritime industry was chosen as the empirical context on account of its accessibility and, compared to the previous studies of legitimacy in whole networks, the pre-network situation in this case network was idiosyncratic.

As for the theoretical delimitations, this research discusses network legitimacy building in a whole network in the pre-network and formation phases as the theoretical framework. In earlier life-cycle studies of legitimacy building in networks, it has been discovered that the life cycle includes several loose stages of evolution. The main focus of this research is on the network formation phase, yet also the pre-network phase and its results are highlighted to some extent. Many other theoretical views on networks could be considered, for example, the theories of network structure, functioning, effectiveness, governance and network outcomes. The literature on IORs and collaboration, networks and alliances is vast. Here, the focus is on the literature on whole networks, particularly supply networks and their legitimacy. However, literature, which is coherent to the view on consciously created, goal-directed, whole networks and their market entry, is also included in this study to some extent, such as theories of alliance legitimacy building.

The research philosophy selected for this study was that of pragmatism. As a philosophical paradigm, it removes the need to separate post-positivism and constructivism (Morgan, 2014), thus allowing the researcher to choose the most suitable research method or methods for each research question. The case study research strategy is suitable for studying complex phenomena and particularly intensive case study enables different methods to be blended in a single setting (Eriksson and Kovalainen, 2008)

The unit of analysis was selected to be the network level. In practice, the network-level results were derived from individuals representing the organizations that were participating in the network. The informants were members of organizations within the network and the other stakeholders were excluded from the interviews. Nevertheless, other stakeholders, such as potential customers and funder's representatives, were part of the network workshops, and were thus observed and used as informants.

1.5 Networking in the Finnish maritime industry

The maritime industry has a long history in Finland and its significance to the national economy is indisputable. However, as an industry, it is sensitive to economic fluctuations. (University of Turku, 2016). The Finnish maritime industry, in general, is very used to networking and the maritime cluster and its networks have been studied since the year 2000 and reported on every few years (Karvonen et al., 2016, 2008; Karvonen and Saurama, 2006; Viitanen et al., 2003). According to Viitanen et al. (2003), the vibrant networking in shipbuilding started significantly prior to other industries in Finland, even before network theories were formed. The rationale behind networking was cost pressure, business cycles and diversity of technology. The network of Finnish shipbuilding companies is wide on Finnish scale and can even measure up to those of Italy, Germany and France, the great shipbuilding countries of Europe. Most of the Finnish maritime companies more or less evolved from the Finnish shipyards, especially after the bankruptcy of Wärtsilä Marine, whereas another branch comprises the descendants of shipbuilding companies in Western Finland, in Rauma and Pori. There are also various spin-offs, such as marine engines, propulsion, fire protection and naval architectural information systems. (Viitanen et al., 2003)

The offshore industry, signifying the oil and gas exploration and production (E&P) industry at sea, is another maritime-related industry, which due to the oil price, is also sensitive to economic fluctuations (Inkpen and Moffett, 2011). Finnish maritime industry companies are also involved in the offshore business, although the domestic markets for E&P in Finland are nonexistent, as oil and gas have not been discovered on the Finnish continental shelf. Also, the development of the offshore industry is monitored and reported on regularly. There is only one production subsidiary of an international manufacturer of offshore production structures, which is located in Finland. However, there are no Finnish manufacturers of vast offshore production structures. (VALOR N A G Partners, 2013, 2012; VALOR Partners Ltd., 2014; VALOR Partners Oy, 2015)

In order to even out the fluctuations in the shipbuilding industry, the Finnish maritime industry organizations decided to enter the offshore business. Thus 20–26 maritime companies decided to join forces in 2010 and start a three-year networking project with the aim of jointly entering the international offshore markets to the fairly challenging target countries of Russia and Brazil in the very demanding industry of upstream oil E&P. As the industry has a long tradition in networking and also the people and companies involved had previous ties, the networking project provided an interesting case to study a whole supply network and particularly legitimacy building in the early formation phase.

1.6 Dissertation structure

The structure of the dissertation is illustrated in Figure 4. Chapter 1 introduces the study; it provides the rationale for this dissertation, defines the objectives, outlines the study, introduces the research context and displays the contents. And most essentially, it presents the research questions that this dissertation answers. A summary of the relevant literature focusing on the main research themes of this study is exhibited in Chapter 2. First, network theory as part of organization theories is explained in order to position the theories used in the plethora of existing organization theories. Second, the concept of supply networks as a network type is described to specify the context of this study. This also includes the four supply network archetypes. Third, the concept of network legitimacy and its four dimensions are defined, which concludes the theoretical chapter by connecting the above-mentioned theoretical foundations to the theoretical framework used in this study. The network legitimacy section also includes a systematic literature review on legitimacy in networks and alliances. At the end of Chapter 2, an analysis of the previous literature is presented. In Chapter 3, the research design and methods are demonstrated, justifying the choices made in terms of the research philosophy and research strategy. A detailed explanation of the research design, collected data, and analysis methods are provided so that the conduct of the study is traceable. In Chapter 4, the results of the empirical part of the study are presented. The results of the single case study are described following the phases of network legitimacy building and their output. These sections are divided into the pre-network phase, network formation phase and legitimacy output of the network project. Each section and sub-section includes a table that presents the research data utilized and the codes used in the qualitative analysis of the section. The pre-network phase section discusses the situation prior to the three-year networking project and answers the first research sub-question (R1a).

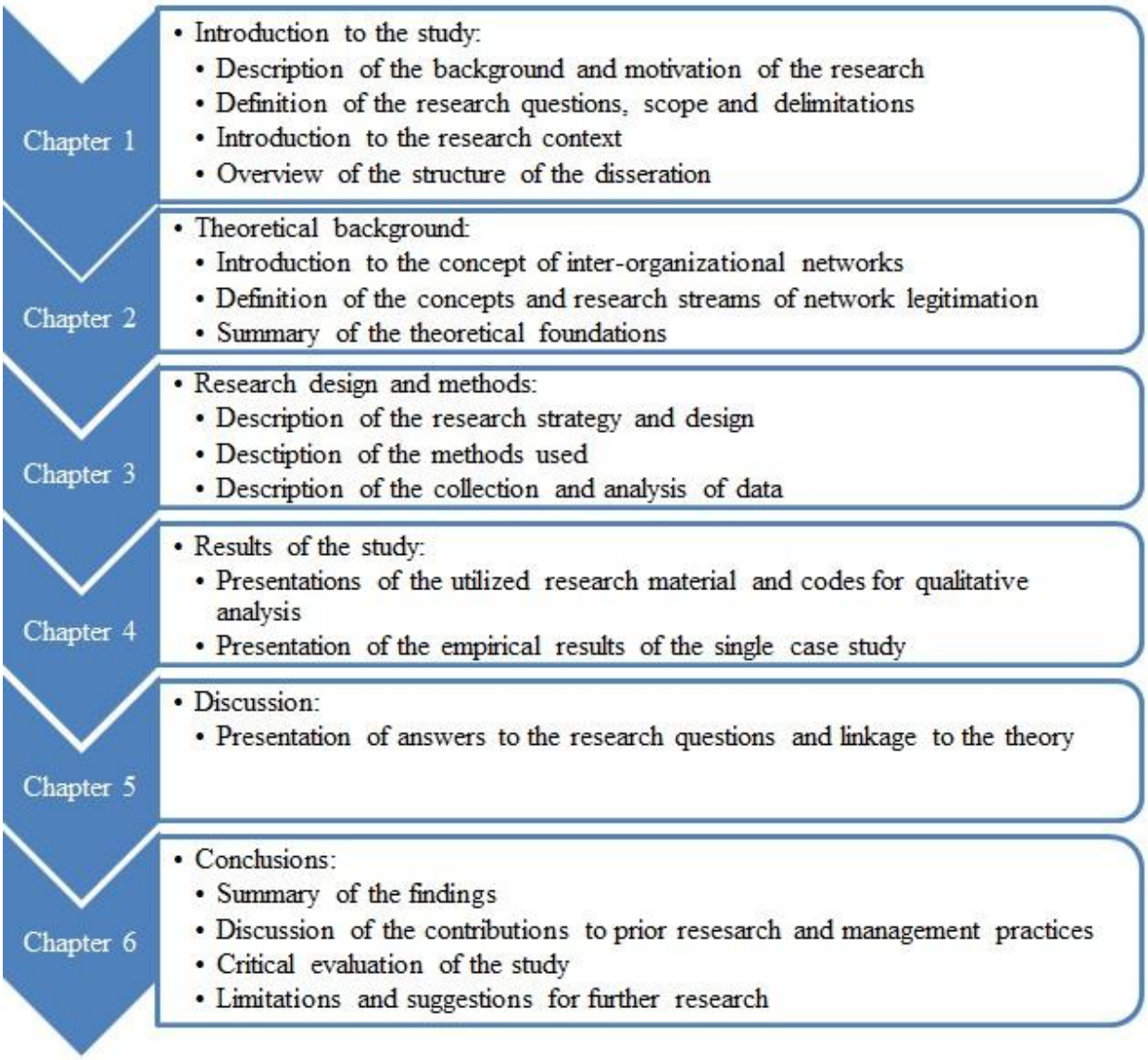

Figure 4. Outline of the dissertation

The network formation phase section discusses legitimacy building in the three-year networking project and answers the second sub-question (R1b). It also determines the supply network archetype or archetypes that this case network represents by answering the third research sub-question (R1c). All together these three sub-questions answer the first main research question. The section on the legitimacy output of the network project contemplates the output of the network project also in terms of the contingencies that enable and hinder, or both, the legitimacy building and answers the second main research question (RQ2) provided in the introduction. Chapter 5 discusses the findings, answers the research questions and links the results to previous literature regarding network legitimacy. In Chapter 6, a summary of the study is given followed by a discussion of the contributions, a critical evaluation of the study and suggestions for further research.

2 Theoretical background

This chapter introduces the main theoretical foundations of this study. First, there is an overview of the network theory within the organization theory, including theoretical paradigms explaining inter-organizational relationship formation and the definitions of network, whole network and supply network, and supply network archetypes. Additionally, competition and the capabilities needed for the market entry of a network are presented. The second part of the theoretical background in this chapter concentrates on the notion of network legitimacy building and collapse in its formation by combining the theoretical viewpoints, thus building the theoretical framework for this study. The results of a systematic literature review of legitimacy in networks and alliances are also presented in this second part. The theoretical framework of this dissertation is constructed by combining the dimensions of network legitimacy building and network dynamics.

2.1 Network theory as part of organization theories

The network theory is part of organization theories, which includes a vast plethora of theories. In order to establish the theoretical foundation that the author aims to make as a theoretical contribution, the position of network theory and the theoretical paradigms used from amongst organization theories are described in this section. With respect to the theoretical foundation and the context of the research, the central concepts of the network, whole network, supply network, and supply network archetypes are defined. Lastly, competition and the capabilities required for market entry are portrayed.

2.1.1 Organization theory is a plethora of theories

Organization theory, *"a collection of general propositions about organizations"* (Starbuck, 2003, p. 132), is an output of the last half of the twentieth century, whereas theories about management have existed for at least 3,000 years (Starbuck, 2003). Although management theory temporally has a longer history, Koontz (1980) considers management theory to be a subset of organization theory, which as a concept he considers too wide. However, compared to medical science for instance, Tranfield et al. (2003) regard management research as a relatively young field. Swedberg (2003) points out that organization theory has two bases: economics and sociology. According to Starbuck (2003), organization theory has fragmented in four ways since the 1950s-60s. Firstly, there is a

divide between psychology and sociology: psychologists defining their interest as “organization behaviour”, differing from “management” and “organization theory”. Secondly, “strategic management” is defining its own behavioural domain, although there is a tendency to split into two domains associated both with economics and with sociology or management. Thirdly, there are new, yet ultimately complementary ideas to older social theories. Fourthly, there is the influence of societies’ cultures on theories and methodologies. (Starbuck, 2003).

As fields of study, leadership and management are at the intersection of many social sciences. Peltonen (2007) has named sociology, anthropology, psychology and political science as the main background sciences for management and organizing, in addition to economics, pedagogy, engineering sciences and social philosophy, which all affect the field of management and organizing. Also, first in 1961 (Koontz, 1961) and then again in 1980 (Koontz, 1980), Koontz visited the “Management Theory Jungle” (see Figure 5), revealing many scientific fields affecting management and leadership.

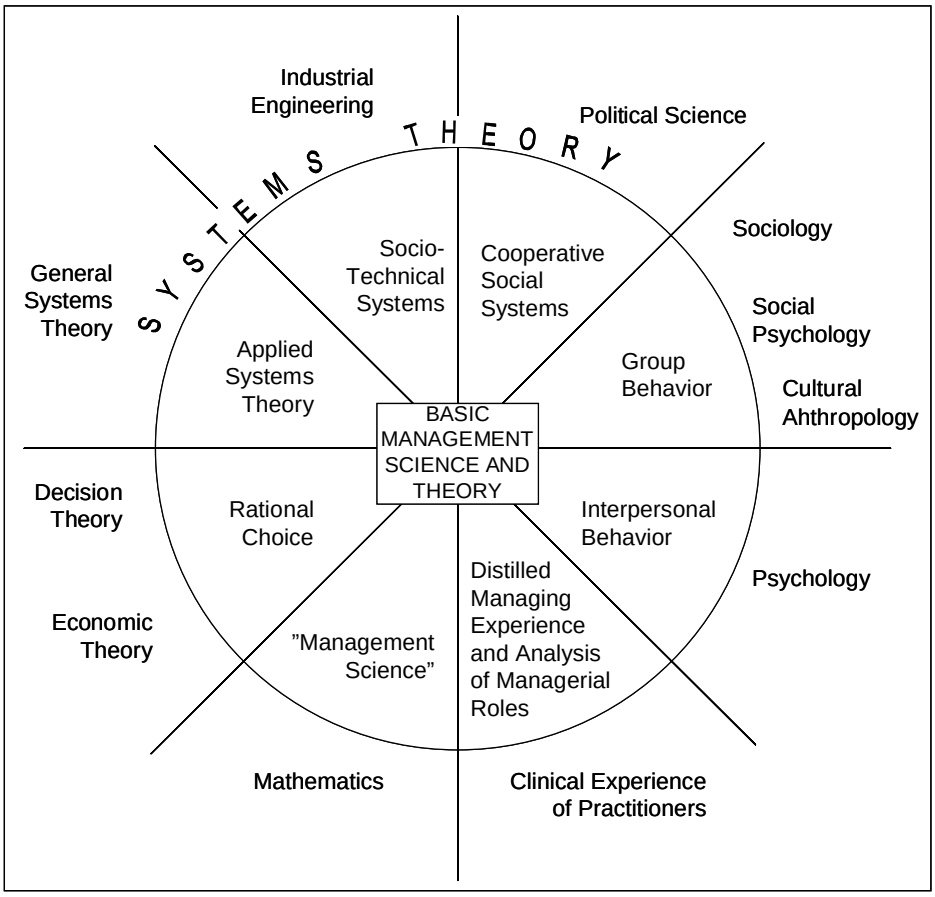

Figure 5. The scope of operational science and theory (Koontz, 1980, p. 182)

In the post-World War Two era, the field of management has experienced a rise, resulting in an increasing body of knowledge, which unfortunately, is fragmented (Rousseau, 1997), transdiciplinary (Whitley 2000), interdependent on advancements in the social sciences and divergent (Tranfield et al., 2003). Thus, Rousseau et al. (2008) do not regard Management and Organizational Science (MOS) as a discipline per se, but as an area of inter-related research activities cutting across numerous disciplines and subfields, with an estimated publishing outlet of over 200 peer-reviewed journals. *"The complicated state of MOS research makes it tough to know what we know, especially as specialization spawns research communities that often don't and sometimes can't talk with each other."* (Rousseau et al. 2008, p. 477) Whitley (1984) has emphasized the practical side of management research by considering it as a practically oriented social science. In addition to the multiplex nature of the research area, the theories regarding management and leadership and also organizations can be approached or grouped from various angles (Seeck, 2008): via Kuhn's paradigm concept (Seeck, 2008); time: prehistory, modern, symbolic-interpretive and postmodern (Hatch, 2006); or metaphor e.g. Morgan (1986) among others. Due to the concepts this dissertation deals with, i.e. networks and their legitimacy, the research is situated in the sector of "Group behavior – Sociology" by Koontz (1980) in the scope of operational science and theory within the plethora of theories used in management science and organizational theory.

2.1.2 Theoretical paradigms explaining the formation of inter-organizational relationships (IORs)

The network paradigm, a strategic organizational response to dynamic environmental pressures, has interested researchers since the 1970s (Cravens et al., 1996). The network paradigm has yielded a vast literature regarding various inter-organizational entities (IOE), which have inter-organizational relations (IOR) or relationships (IORs) with each other (Cropper et al., 2009). These inter-organizational entities have been named for example alliances, coalitions, clusters, partnerships, strategic alliances, strategic business 'nets', and networks (Cropper et al., 2009; Järvensivu and Möller, 2009; Provan et al., 2007). Yet *"no single grand theory of networks exists"* (Provan et al., 2007, p. 482). According to Barringer and Harrison (2000), the literature, with contributions to several disciplines regarding inter-organizational relationship formation, is fragmented, reflecting the multifaceted phenomena. They list six theoretical paradigms: Transaction Cost Economics (TCE), Resource Dependence, Strategic Choice, Stakeholder theory, Learning theory and Institutional theory, which have contributed to the literature on inter-organizational relationship

formation and fall in a conceptual continuum ranging from reliance on an economic rationale to behavioural rationale for IORs. However, Barringer and Harrison (2000) state that any motivation arising from all other five perspectives can be linked to strategic choice. Their view is that firms have a tendency to have multiple reasons, not just one, for forming alliances: cost minimization, risk sharing and learning, among others. Also, they find none of the above-mentioned theories to be holistic; therefore, the theoretical paradigms should be blended for more applicable ways to comprehend the formation of IORs. Additionally, Barringer and Harrison (2000) encourage researchers to look beyond these six paradigms. They also point out that majority of IORs fail, therefore, it would be beneficial to research the management practices and techniques that facilitate the ongoing success of IORs. Also, there is little research on the early phase of alliance formation when little trust exists (Badir and O'Connor, 2015). Raab and Kenis (2009) point out that most theories referred to as network theories, such as Balance theory, Homophily theory, Transaction Cost theory or Resource Dependence theory, are in fact theories that form the dependent variables in dyadic relations and should, therefore, be labelled relational theories. They also point out that Human and Provan (2000) applied Institutional theory to explain network development and network success and that some other authors have used e.g. *"contingency theory to explain the size, type and the structure of the networks"* (Raab and Kenis, 2009, p. 208).

Lowensberg (2010) has presented a conceptual model based on Barringer and Harrison's (2000) introduction of the six widely used motivational paradigms. Lowensberg argues that these paradigms should be used in order for managers to apply the holistic and long-term approach to their understanding of strategic alliances. Also, he encourages researchers to implement a blend of the paradigms. However, according to Lowensberg (2010), the linear sequence of the continuum of theoretical foundations of IORs presented by Barringer and Harrison (2000) does not provide any indications to the possible relationships that exist between the paradigms; furthermore, other researchers dealing with the issues of strategic alliance management in isolation have reinforced this lack of recognition of the relationships between different paradigms. Lowensberg (2010) points out that the paradigms that are necessary do not occur in isolation and that not all of them are important to every alliance scenario. In Lowesberg's model, *"Strategic Choice"* is *"the overall motivational element"*, with an *"overarching role that sets it apart from the other motivational paradigms"* in strategic alliances (Lowensberg, 2010, p. 1097). He sees that the applicability to help decision making is not only in the formation stages of alliances but also throughout an alliance's

life cycle. The six organizational theory paradigms belonging to Lowensberg's model are introduced and their connections to each other are described in brief below (Figure 6).

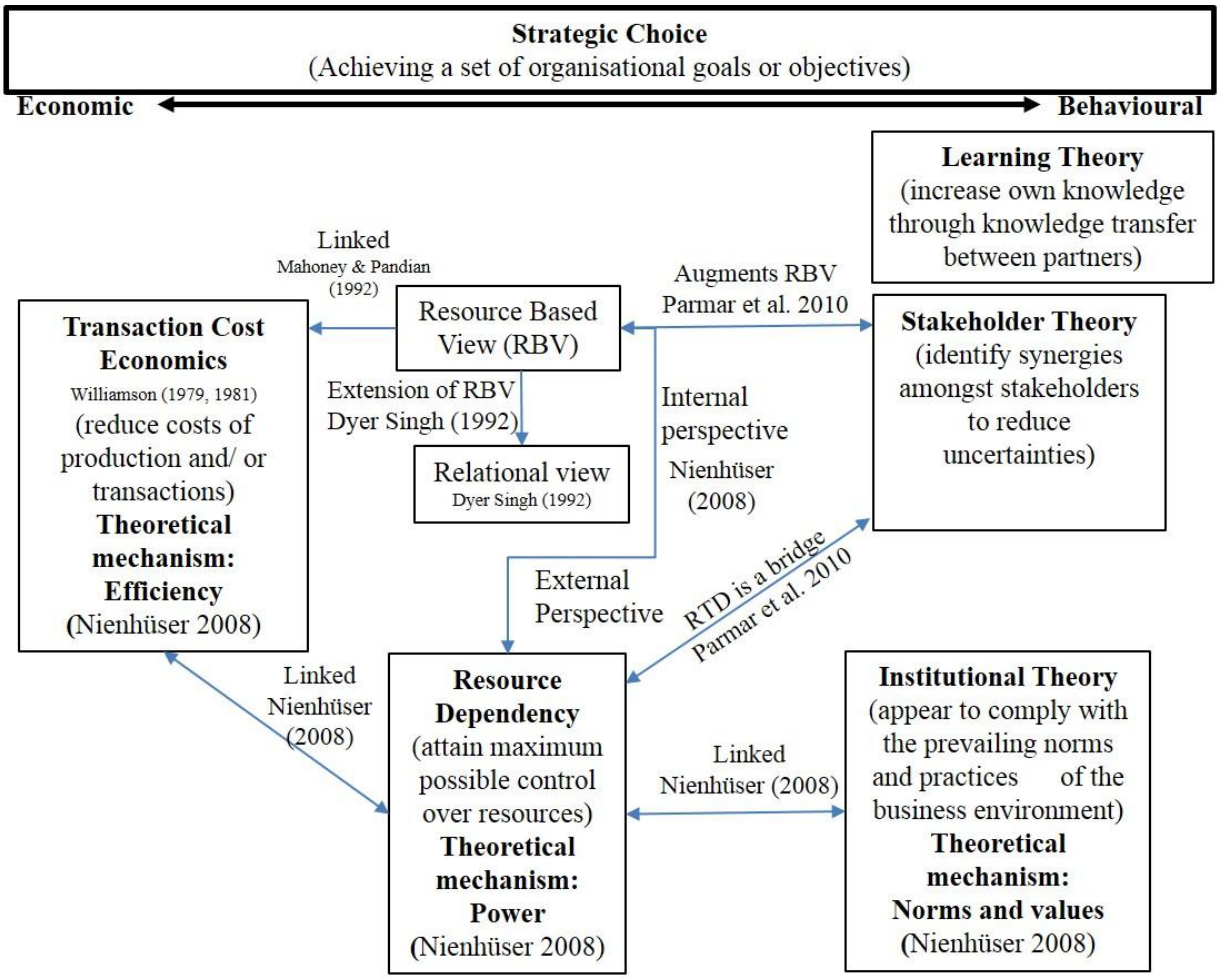

Figure 6. Paradigms used in network research and their relations to each other

The Strategic Choice paradigm presents a *"plethora of different strategic reasons organizations might have to enter into alliances, and the fragmented nature of research linking strategic choice and alliances"* (Lowensberg, 2010, p. 1094). Profit and growth are objectives for strategic behaviour leading, for instance, to partnering with local companies as a means of international market entry (Barringer and Harrison, 2000). Lowensberg defines strategic choice as *"a paradigm that refers to the intent or decision of an organization's management to engage in a strategic alliance to achieve a set of goals or objectives"* (Lowensberg, 2010, p. 1094). Lowensberg (2010) stresses the necessity of corporate objectives, and to whom the objectives belong, not only to the organization's management but to the management of an alliance project, too. This notion is used in the present study: the perspective is not only the networking strategies of individual network

organizations but especially the objectives and the strategy of the network project and the network as a whole. Lowensberg (2010) also emphasizes the constant and iterative character of control, evaluation and reflection in the strategic alliance process, together with corrective measures.

Transaction Cost theory, (TCE), is based on the work of Williamson (Williamson, 1981, 1979). As part of the organizational economics paradigm (Mahoney and Pandian, 1992), TCE incorporates make, buy or partner decisions; viewing networks as an alternative to market or organizational hierarchy, and the existence of a "hub firm" and foreign market entry via joint venture with a local partner (Barringer and Harrison, 2000). TCE has been linked to the Resource Based View (RBV), since *"resource combinations are influenced by transaction economization (Teece, 1982; Williamson, 1991)"* (Mahoney and Pandian, 1992, p. 370). TCE has been criticized for its viewpoint that excludes e.g. learning, although there are more evolved TCE-based approaches, such as the "relational view" (Dyer and Singh, 1998), which is an extension of RBV. The relational view reasons that *"critical resources may span firm boundaries and that firms earn also relational rents, which are jointly generated with alliance partners. Such relational rents derive from specific assets firms dedicate to alliance relationships and from complementarities between their resources and the resources of their partners"* (Lavie, 2006, p. 642).

Rooted in the open system framework, the Resource Dependency theory (RDT) by Pfeffer and Salancik (1978) argues that to obtain resources, all organizations have to enter into exchanges with their environment. The reasons for organizations to form IORs are either to exert power or control over those organizations that hold scarce resources or to fill a perceived resource need. (Barringer and Harrison, 2000) RDT is also connected to RBV, both perspectives based on the assumption that *"the control over critical resources of one focal organization is the most important determinant of firm behavior"* (Nienhüser, 2008, p. 17). Due to their similarities, some scholars are willing to combine RBV and RDT, yet they also have three main differences. Firstly, regarding their perspectives, RDT has a stronger external perspective, whereas RBV's is internal. Secondly, the assumptions of theoretical mechanisms for developing explanations in the different behaviour of organizations, which in RDT is power and its equivalent, dependency, and in RBV profit-seeking for resources in order to gain a competitive advantage in the market. Thirdly, the nature of the theories, as RDT is more descriptive, explicative and value-neutral, and RBV more prescriptive, due to its development in the context of strategic management. (Nienhüser, 2008). According to Nienhüser (2008), RDT also has similarities and differences to TCE and Institutional theory: *"the dependent and independent variables being quite similar, yet the theoretical mechanisms (the*

moderating variables) are different. The theoretical mechanisms of RDT being power, TCE being efficiency and Institutional theory being norms and values as "social forces"" (Nienhüser, 2008, p. 17–18). RDT has not been applied much recently to the study of inter-organizational relations, yet many of its arguments have been absorbed or taken up by other approaches such as TCE and Institutional theory (Cropper et al., 2009).

The status of Stakeholder theory as a theory is controversial. Some scholars see it as an alternative theory, others as a framework, a genre of management theory. As a genre of management theory, it is not applicable for a specific purpose, like RDT, but for a variety of uses. It also encompasses both the "economic" and "social" aspects of business. (Parmar et al., 2010). According to Freeman (1984), the word "stakeholder" was first used in management literature by Stanford Research Institute in 1963, and he suggested adopting the term. According to Parmar et al. (2010), stakeholder theory aims at addressing three interconnected problems of value creation and trade, the ethics of capitalism, and managerial mindset. They claim, that stakeholder theory has connections to other theories, e.g. it is claimed that strategic management is moving more towards Stakeholder theory by applying the same concepts with its own terminology: using external contributors, resources and inputs instead of stakeholders. Furthermore, RDT is seen as a bridge between Stakeholder theory and established theories. Additionally, the Stakeholder theory augments the RBV by providing guidance for resource management and embedding the ways to distribute the created economic rents in a particular network or stakeholder relations. (Parmar et al., 2010). According to Barringer and Harrison (2000), in a network context, Stakeholder theory places organizations at the centre of an interdependent web of stakeholders, making the organization responsible for acknowledging the legitimate claims of their stakeholders when they make decisions and conduct business transactions. The formation of an alliance, network or constellation is carried out to align their own interests with the interest of stakeholders and to reduce environmental uncertainty too. Additionally, the stakeholder perspective also explains a firm's stakeholder network as the source of sustainable competitive advantage (Harrison et al., 2010). Stakeholder theory is also applied in research into stakeholder legitimacy. However, the reasons for making a stakeholder a legitimate one for a company, or for a given research agenda, alternate. (Parmar et al., 2010)

Organizational Learning theory covers processes that result in organizational learning. The key factor is absorptive capacity (Cohen and Levinthal, 1990), which is the firm's ability to identify the value of new knowledge, internalize it, and apply it in a business setting. Therefore, absorbing the

maximum amount of knowledge from inter-organizational partners is significant in order to enhance the organizational competencies and in the long run add value to the organization. (Barringer and Harrison, 2000). Easterby-Smith and Prieto (2008) identify the process of learning as a central mechanism that links the concepts of knowledge management and dynamic capabilities together. Therefore, those studies along with the capability view can also be included under the Learning theory approach.

Institutional theory claims that *"the institutional environments impose pressures or organizations to appear legitimate and conform to prevailing social norms"* (Barringer and Harrison, 2000, p. 380). The reason for organizations to form inter-organizational relations is to attain legitimacy, or isomorphic pressures may drive organizations to mimic firms that have established inter-organizational relations, too. (Barringer and Harrison, 2000, p. 370)

To sum up the theoretical paradigms used in relation to network research, some of the paradigms are controversial and there are evident connections between the different paradigms. The theories and paradigms used in network research are interconnected and their boundaries somewhat hazy. Therefore, theoretical contributions may be yielded and in turn, benefit one or more theories simultaneously.

2.1.3 Network research and network theories

Since the mid-1970s European and Scandinavian and since the mid-1980s American researchers have been interested in the network paradigm, a strategic organizational response to dynamic environmental pressures (Cravens et al., 1996). This trend is portrayed by Raab and Kenis (2009) as a move by Western societies towards a society of networks, i.e. a society in which the formal vertically integrated organization is replaced or complemented by whole networks. Scholars use various terms besides networks, such as partnerships, strategic alliances, inter-organizational relationships (IORs), coalitions, cooperative arrangements, collaborative agreements (Provan et al., 2007) or strategic business 'nets' (Järvensivu and Möller, 2009; Möller et al., 2005).

Earlier, concepts such as alliances and networks were treated as more or less interchangeable. However, as the research on the subject has evolved, so has the terminology, as seen in two-page Table 1. Particularly, the dichotomy of equity and non-equity alliances has been prevailing in the alliance literature (Das and Teng, 2000, 1998, 2001; Reuer and Ariño, 2007).

Table 1. Definitions of alliances, networks and clusters

Author/term	*Definition*
Jarillo (1988, p. 32) *Strategic networks*	Strategic networks are "long-term, purposeful arrangements among distinct but related for-profit organizations that allow those firms in them to gain or sustain competitive advantage vis-à-vis their competitors outside the network". - Emphasizes the role of the "hub firm".
Ebers (1997, p. 4) *Network*	"...We shall refer to these and other forms of inter-organizational co-operation (such as contractual joint ventures) as inter-organizational networking relationships. If more than two organisations are linked through such networking relationships, they constitute an inter-organisational network…. inter-organizational networking represents a particular form of organizing, or governing, exchange relationships among organisations. While networking can take different forms, all these forms are characterized by recurring exchange relationships among a limited number of organisations that retain residual control of their individual resources yet periodically jointly decide over their use."
Gulati (1998, p. 293) S*trategic alliances*	"I define strategic alliances as voluntary arrangements between firms involving exchange, sharing, or codevelopment of products, technologies, or services. They can occur as a result of a wide range of motives and goals, take a variety of forms, and occur across vertical and horizontal boundaries."
Das and Teng (1998, p. 21–22) *Strategic alliances*	"Generally speaking, strategic alliances are considered a form of cooperative arrangement between organizations. Even so, there is some ambivalence when it comes to precisely classifying what types of cooperative arrangements can be termed strategic alliances." More inclusive approach: "In this approach, under the rubric of strategic alliance, there are various kinds of arrangements: joint ventures, equity investment, licensing, joint R & D arrangement, technology swap, buyer-supplier relationship, and others." More restricted view: "strategic alliances refer only to those deals in which the parent firms are tied to each other in a substantive manner, i.e., long-term interdependence, shared control, and continued contributions by the parents. ..only a few selected kinds of cooperative arrangements would qualify as strategic alliances, and would include joint ventures, equity investment, joint R & D, and joint marketing."
Gulati and Gargiulo 1999, p. 1440–1440) *Strategic alliance*	"...interorganizational strategic alliances. Alliances are a novel form of voluntary interorganizational cooperation that involves significant exchange, sharing, or codevelopment and thus results in some form of enduring commitment between the partners." "Strategic alliances are a vivid example of voluntary cooperation in which organizations combine resources to cope with the uncertainty created by environmental forces beyond their direct control. These alliances are organized through a variety of contractual arrangements, ranging from equity joint ventures to arm's-length contracts (Harrigan, 1986; Gulati, 1995a; Gulati and Singh, 1999)"

Table 1. Definitions of alliances, networks, and clusters (continued)

Author/term	*Definition*
Barringer and Harrison (2000, p. 383) *Alliance, Network*	Forms of IORs: Alliance, loosely coupled: "An arrangement between two or more firms that establishes an exchange relationship but has no joint ownership involved." Network: tightly coupled: "A hub and wheel configuration with a local firm at the hub organizing the interdependencies of a complex array of firms."
Das and Teng, 2000, p. 31), Das and Teng (2001, p. 16) *Alliance*	Four categories of alliances/typology of alliance structures: equity joint ventures, minority equity alliances, bilateral contract-based alliances, and unilateral contract based alliances
Reuer and Ariño, (2007, p. 313) *Alliance*	The dominant taxonomy of alliances used in empirical research collapses numerous forms of alliances into two broad categories, also arrayed along the familiar markets–hierarchies continuum: non-equity alliances, or purely contractual agreements, vs. equity alliances, which involve greater hierarchy due to shared ownership and control (e.g., Oxley, 1997; Sampson, 2004).
Provan et al. (2008, p.122) *Networks*	Define networks "as groups of three or more legally autonomous organizations that work together collectively and collaboratively to try to achieve not only their own goals but also the collective goal of the network as a whole."
Raab and Kenis (2009, p. 198) *Networks*	"Networks…we define as consciously created groups of three or more autonomous but interdependent organizations that strive to achieve a common goal and jointly produce an output. Therefore, serendipitous networks, i.e. networks that are not goal directed and come into being as emergent entities through the dyadic interaction of actors are not included in this definition and are seen as a different organizational form"
Pitelis (2012, p. 1361) *Clusters*	"'Clusters' are geographical agglomerations of firms in particular, related, and/or complementary activities, sharing a common vision, and exhibiting horizontal, vertical intra- and/or inter-sectional linkages, embedded in a supportive socio-institutional setting, and cooperating and competing in national and international markets"

Barringer and Harrison (2000) seem to deviate from the mainstream of alliance definitions with their view of no joint ownership. Das and Teng (2001) point out that although several typologies had been proposed for the organizing of large collection of alliance forms, none was widely accepted in the literature. Therefore, the claim that most studies have relied on the dichotomy of equity (e.g. joint ventures and minority equity alliances) versus non-equity alliances, which include all other cooperative arrangements that do not involve equity exchange, differing from unilateral (e.g. licensing, distribution agreements and R&D contracts) to bilateral contract-based alliances.

However, in unilateral contract-based alliances, individual firms carry out their obligations independently, performing without much coordination or collaboration with a low level of integration. (Das and Teng, 2001).

According to Das and Teng (2001), bilateral contract-based alliances involve the sustained joint creation of property and knowledge for the partners, requiring them to bring in resources and work together on a constant basis (e.g. joint R&D, joint marketing and promotion, enhanced supplier partnership and joint production), therefore the integration between the partners is fairly tight and the contracts are usually incomplete and more open-ended. Therefore they suggested a new typology of alliance structures: equity joint ventures, minority equity alliances, bilateral contract-based alliances, and unilateral contract based alliances. For that reason, the alliances are mainly based on equity and/or contract. However, according to Raab and Kenis (2009), networks can occur without contracts, based on the joint goal or outcome. Certainly bilateral contract-based alliances, for instance, are on the verge of being networks, with their *"incomplete and more open-ended existence"*, which allows *"the cooperative relationship to unfold itself"* (Das and Teng, 2001, p. 16).

Huuskonen and Kourula (2012) state that there are two underlying assumptions about networks and their management. Firstly, regarding networks as markets, viewing networks as emergent structures that are not to be managed (e.g. Ford and Håkansson, 2006; Håkansson and Ford, 2002) . Secondly, regarding networks as organizations, viewing networks as having more strategic orientation (e.g. Gulati, 1998; Jarillo, 1988; Möller et al., 2005; Möller and Rajala, 2007). This dissertation takes the latter view. Järvensivu and Möller (2009) point out that in the studies of 'nets', i.e. strategic networks, by Möller and colleagues, membership in the network is limited, and the roles and responsibilities are negotiated amongst the members. In accordance with the strategic orientation of networks, they report that *"networks are managed all the time"* and management *"consists of a complex pattern of activities—intentional or emerging, strategic or non-strategic—for framing, activating, mobilizing, and synthesizing"* (Järvensivu and Möller, 2009, p. 659). However, the extent of managerial tasks employed may differ in strategic and emergent networks, depending on the characteristics of networks, such as relative closure (Järvensivu and Möller, 2009).

On the other hand, Raab and Kenis (2009) state that there are two kinds of approaches to network theorizing: firstly, serendipitous networks, which do not develop a collective identity, which they call "Networks an sich"; and secondly, a network theory of whole networks of "Networks für sich",

which are consciously created, goal-directed networks that form a separate identity and act collectively. They called the latter the new organizational form, which is the focus area of this dissertation.

In accordance with the choices made above, some seminal papers defining such networks were also chosen. In his seminal paper, Jarillo (1988) defines 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-à-vis their competitors outside the network'"* (Jarillo, 1988, p. 32) and emphasizes the role of the "hub firm". Provan et al. (2008) define networks *"as groups of three or more legally autonomous organizations that work together collectively and collaboratively to try to achieve not only their own goals but also the collective goal of the network as a whole"* (Provan et al., 2008, p.122), yet they highlight the narrowness of their definition. Combining the definitions of Jarillo (1988) and Provan et al. (2008), in this dissertation, the *network*, in general, is defined as *a distinct set of three or more legally autonomous, yet related and recognized member organizations that aim at the collaborative goal achievement that benefit both the individual network organizations and the network as an entity, while having some type of governance system.*

This combined definition presents the focal points of networks. Firstly, a network is a distinct set of three or more legally autonomous organizations that are related. In other words, although the organization network is not based on either equity and/or contract, like alliances (Das and Teng, 2001), there is an existence of membership within the network recognized by the organizations. The membership may be formed via for instance a joint goal or outcome (Raab and Kenis, 2009). Secondly, there is an emphasis on the collaborative goal achievement that benefit concurrently both the network as an entity and the individual network organizations. This means that the network organizations co-operate to generate a common goal and to achieve it. The common goal has to benefit the network as an entity, but it may not be harmful for the individual network organizations. Thirdly, a hub company or organization holds an important role, i.e. the network requires some type of governance. Moreover, Raab and Kenis (2009) add intentionality to the network formation and call such networks *"whole networks"*, defining them as *being "consciously created and goal-directed networks of three and more organizations"* (Raab and Kenis, 2009, p. 198). Therefore, in this dissertation, the focus of the theory is on consciously created and governed whole networks, which have a joint goal and recognized membership. To this view on networks, the definition of clusters by Pitelis (2012) has many similarities, yet it lacks the intentionality. Furthermore, as the

definitions of the various IORs do overlap, some of the views from the theories of alliances and clusters are implemented when compatible with the chosen view on networks.

According to (Möller and Halinen, 1999), it is noticeable that the majority of network research has been focused on organically evolved networks, their general characteristics, structure and development processes. Also, Möller and Svahn (2003) point out that less attention has been paid to intentionally developed networks and their management, with the exception of some authors (see e.g. Ahuja, 2000; Amit and Schoemaker, 1993; Gulati et al., 2000; Jarillo, 1988). Additionally, for instance, Provan and Milward (1995) and van Raaij (2006) have studied intentionally developed networks. Human and Provan (2000) state that the dynamics of evolution in networks emerging from previous business ties, such as alliances and joint ventures, are likely to be different than in formally constructed networks organized from scratch and other multilateral networks, in which trust, cooperation, other aspects of identification and commitment based embedded ties are not likely to be present. According to Contractor et al. (2006), the shift in the research focus from examining "emergent" i.e. informal networks to explaining the "emergence" of organizational network has required network analysts to make three methodological shifts. Firstly, from exploratory and descriptive techniques to confirmatory and inferential techniques. Secondly, from single-level, single-theoretical network analyses to multi-theoretical, multi-level analyses. Thirdly, from purely network explanations to hybrid models that also include attributes of the actors. (Contractor et al., 2006). However, according to Provan et al. (2007), there have been only a few studies of whole network evolution; in fact, they found only 26 empirical studies where the network was the unit of analysis (Raab and Kenis, 2009). Studies of whole networks fall into two broad categories of findings: network properties and processes associated with whole networks, such as structure, development or evolution, and governance; and network outcomes, such as network failure (Provan et al., 2007). Raab and Kenis (2009) also suggest that there should be a distinction between network theories and theories of networks. They claim, that network theories explain the characteristics of networks, their coming into being, their structure and dissolution, thus using "network" as a dependent variable. Network theory of "Y", for example the network theory of social capital, is a theory that uses network characteristics to explain all sorts of social phenomena and outcomes, such as specific social, political or organizational phenomena that are also commonly explained by other theories such as effectiveness, leadership, job performance, policy making, etc., thus "network" serves as an independent variable (Raab and Kenis, 2009). According to Raab and Kenis (2009), the majority of contributions in studies of networks used the network as the

independent variable and scholars *"need to develop especially network theories, i.e. theories that explain the coming into being, governance, functioning, effectiveness and failure of such "networks für sich""* (Raab and Kenis, 2009, p. 199). Raab and Kenis (2009) consider that the theory of whole networks also requires additional research methods: network analysis based on relational variables and statistics on network-level attributes.

In addition to the various organizing categories, network research can be carried out at different levels of analysis: micro - the egocentric network, and macro - the overall network structure (Ibarra et al., 2005); there are also dyadic, triadic and global levels of network analyses, and even multi-level (Contractor et al., 2006). Yet, all three levels of network analysis: dyadic, triadic and global, may take place in networks of individuals, or of units, or of organizations (Moliterno and Mahony, 2011). According to (Carpenter et al., 2012), regarding the methodological issues and choices, network research can be classified into four major categories: social capital research, network development research due to the direction of causality, and two additional classes to reflect the level of analysis of interpersonal and inter-organizational level research. The network development research scholars focus on recognizing the patterns and determinants of network formation and change (Carpenter et al., 2012).

Network formation and its phases have also been researched to some extent. Ebers (1997) states that in the literature there are mainly three main phases of network formation: 1) pre-networking or network formation phase, 2) network development phase and 3) solid networking, see Table 2. In the pre-networking or network formation phase, the preconditions are established, potential partners identified and joint interests considered. Furthermore, in the network development phase, the conditions for network building and direction are set, together with the identity. Moreover, in solid networking, the network structure is built and tested. In those studies of the phases of network formation, scholars have also presented various factors that facilitate and constrain the full completion of each phase, which Ebers (1997) calls contingencies. Therefore, in this dissertation also, factors either enabling or hindering network legitimacy building are called contingencies.

Table 2. Three network formation phases and contingencies

	First phase	***Second phase***	***Third phase***
Larson (1992)	Pre-networking stage where the preconditions for establishing a relationship are set out	Conditions to build a relationship are established	Networking relationship solidifies
Contingencies	Personal reputations, prior relations, and firm reputations	Perceived mutual economic advantage, agreed trial period, and one of the parties takes the lead	Operational and strategic integration, some social control
Gray (1985)	Problem-setting phase in which potential partners identify one another and mutually scrutinize possible joint interests	Direction-setting phase in which potential networking partners articulate their values and begin to develop a sense of common purpose	Structuring phase in which the partners develop and build the structures that are intended to support their co-operative activities
Contingencies	Importance of interdependence among the actors, of shared perceptions of legitimacy, and shared power		
Snow and Thomas (1993)	Network formation	Network development	Network testing
Contingencies	Three broker roles and their associated, phase-specific behaviours		

In the network management context, Järvensivu and Möller (2009) have categorized the various contingencies into a framework of four contingency groups. The four groups are: 1) basic contingencies of network management, 2) function-level contingencies, 3) task-level contingencies and 4) role-level contingencies. The basic contingencies of network management are the modern industrial and institutional socio-economic contexts of organizing. The function-level contingencies determine the governance forms. The task-level contingencies are strategic versus emergent network type of value creation. Role-level contingencies are characteristic of the actors, such as size, capabilities and power. (Järvensivu and Möller, 2009).

2.1.4 Supply networks and supply network archetypes

Networks exist in many different types and forms: they develop both vertically and horizontally. Therefore, there are many types of networks and network properties to study (Hämäläinen and Schienstock, 2000). For example, a supply network is a *"network of firms engaged in manufacturing and assembly of parts to create a finished product"* (Choi and Hong, 2002, p. 469). The rationale for discussing this case network under the term supply network is that most of the network organizations were engaged in manufacturing and assembling parts for the creation of various products either as an entity or part manufacturers or designers. Only a few were involved in the use of the products, such as operators, or expert knowledge service providers.

Pathak et al. (2014) have identified four supply network archetypes: "community", "federation", "consortium" and "hierarchy", which, however, they do not consider exhaustive. They believe that the supply network archetypes have four interrelated elements that are common to supply networks: 1) firm-level tasks, 2) ties between the firms, 3) network-level objectives and 4) governance. Firm-level tasks are typical operational tasks like product development, procurement, production and distribution. Ties between the firms mark co-operation between the firms, and competition if they are absent. Network-level objectives are the collective targets of the network organizations, such as resource pooling or knowledge development. (Pathak et al., 2014). For network governance, there are three basic forms: "shared", which is administered by member firms, "lead", which is governed by a lead organization and "network-administered", which is governed by the Network Administrative Organization, NAO (Provan and Kenis, 2008). In the archetyping of Pathak et al. (2014), a community supply network is for a specific geographical region, where the products and services are associated with that region and it has low levels of competition and co-operation at the beginning, with ad hoc coordination. In a federation supply network, the companies produce parts or develop technology solutions and often share resources, with shared governance. The companies may specialize in niche areas, which leads to a hierarchy supply network, where governance is managed by buyers through contracts. In a consortium, the companies perform R&D and develop new knowledge, the competition between the companies is fierce and the network is governed by an NAO. (Pathak et al., 2014). Regarding the consortium supply network archetype, Phelps et al. (2012) define knowledge networks as *"a set of nodes–individuals or higher level collectives that serve as heterogeneously distributed repositories of knowledge and agents that search for, transmit, and create knowledge—interconnected by social relationships that enable and constrain nodes' efforts to acquire, transfer, and create knowledge"* (Phelps et al., 2012, p. 1117). Similarly Seufert

et al. (1999) define knowledge networking as signifying *"a number of people, resources and relationships among them, who are assembled in order to accumulate and use knowledge primarily by means of knowledge creation and transfer processes, for the purpose of creating value"* (Seufert et al., 1999, p. 184). Therefore, here the consortium supply network and knowledge network are used as interchangeable terms.

In supply networks, organizations use different strategies towards competitors. Some organizations in business networks may use traditional competition strategy (Bengtsson and Kock, 1999), which is non-collaborative. Some organizations may or may not employ co-opetition strategy, i.e. simultaneous collaboration and competition, where they have a certain number of competitors in the total portfolio of alliance partners (Ritala, 2012). In fact, co-opetition and its occurrence in supply networks have not been thoroughly researched (Pathak et al., 2014). In network legitimacy literature, competition has been noticed to cause problems in interpartner legitimacy both in network formation and development, at least in regional strategic networks (Gebert-Persson et al., 2011). Hence, the competing situation and strategies towards collaboration with competitors should be taken into account when studying network legitimacy.

2.1.5 Capabilities and resources required for new market entry

Inter-organizational networks are important for firms entering foreign markets. In some fields, both the entry modes and dominant forms of coordination are networks (Sydow et al., 2010). Knowledge-based resources have a great significance when entering a new market, which often also requires new knowledge. Therefore, access to new knowledge is attained either via alliances or acquisitions (Ranft and Marsh, 2008). As the literature on whole networks is scarce, there is also no particular literature on the capabilities required for new market entry as a whole network. However, there is literature on the organization level related to the special capabilities, both technological and market knowledge, required for new market entry, which most likely is also applicable for whole networks.

Helfat and Lieberman (2002) have analysed the capabilities and resources especially needed for market entry from a single organization's point of view. They point out that when firms, new or existing ones, enter a market in which they do not currently participate, they are forced to develop new capabilities or alter existing ones. Similarly, Meyer et al. (2009) in their resource based view model point out that both exploitation and augmentation of knowledge and other resources are the core strategic considerations for firms entering a foreign market. Helfat and Lieberman (2002) list

four categories of pre-entry resources and capabilities: core, complementary, specialized and generalized. As examples of the core resources and capabilities or knowledge required for creating a product or service, they propose technological knowledge and knowledge of customer needs. Technological knowledge is knowledge associated with products, technologies, and/or processes, whereas market knowledge is knowledge associated with targeting customer sets, entering markets, distribution channels, marketing approaches and business models (Burgers et al., 2008). Burgers et al. (2008) studied the exploration and exploitation of technological and market knowledge in new business development (NBD) projects (Figure 7). They present, that exploration is the act of creating knowledge that is new to the firm through activities such as experimentation, innovation, search and variation, whereas exploitation is using knowledge existing in the firm and is associated with implementation, efficiency, production and refinement. According to Burgers et al. (2008), NBD requires both the exploration and the exploitation of knowledge, yet they need different styles of management and organizational arrangements. In Figure 7, it can be noticed that in the early development phase the emphasis is mainly on the exploration of technological knowledge, and the start of the exploration of market knowledge.

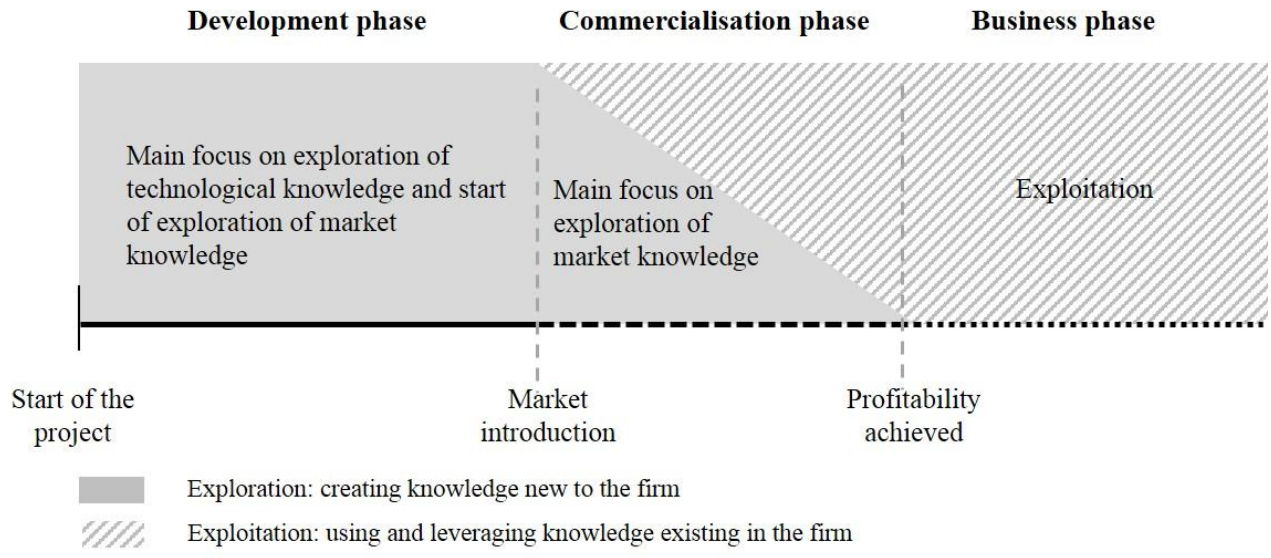

Figure 7. Exploration and exploitation of technological and market knowledge in subsequent phases of an NBD project's life cycle (Burgers et al., 2008, p. 59)

Current markets and contacts are a paramount issue when pursuing internationalization. According to Johanson and Mattsson (1987) a firm's success when entering new international markets, depends more on its relationships within current markets, both domestic and international, than on the chosen market and its cultural characteristics. Furthermore, expansion to international markets can be done

via existing relationships. Coviello and Cox (2007) have studied international new ventures (INV), which have a global focus and commit resources to international activities, as well as being involved in networks to facilitate rapid internationalization. They assume that as INVs are facilitated by network relationships, those relationships emerge prior to the internationalization. Yet a current understanding of INV networks starts with the initial foreign market entry and activities after it, not prior to it, although ties and knowledge also have an input to the pre-internationalization phase. At network level, according to (Dyer and Nobeoka, 2000), there are various routines that can be used for inter-organizational knowledge-sharing. These routines include information exchange between member companies, mutual development and training among member companies, socializing events, various inter-organizational teams, such as consulting or problem-solving and voluntary learning teams, and inter-firm employee transfers (Dyer and Nobeoka, 2000).

2.2 Framework for network legitimacy building in pre-network and network formation phases

The theoretical framework for legitimacy building in network formation is illustrated in this section. Legitimacy is a much-researched topic in organizational sociology, however not so much in network research. Therefore, in this section, in addition to the literature discovered with “snowballing” and informal approaches (Greenhalgh and Peacock, 2005), a systematic literature review (Tranfield et al., 2003) regarding the literature of legitimacy in networks and alliances is also described. As a conclusion, the composed theoretical framework of network legitimacy during its formation phases is presented.

2.2.1 Legitimacy in organizational sociology

According to Sonpar et al. (2010), legitimacy is one of the concepts in organizational sociology that receives the most attention. However, the literature on legitimacy in organizations is fragmented. There are two approaches to managing legitimacy: institutional and strategic (Sonpar et al., 2010), although, according to Dacin et al. (2007), they complement rather than compete with a legitimacy explanation, at least when firm and strategic alliance performance is in question. In addition, Deephouse et al. (2017) highlight the fact that the strategic and institutional approaches have existed for the past 20 years in the research of legitimacy in organizations.

Amongst institutional theorists, such as DiMaggio et al. (1983), legitimacy is *"virtually synonymous with institutionalization"* according to Suchman (1995, p. 576). Besides influencing the ways organizations behave, legitimacy has also been shown to affect the performance and survival of organizations (Pollock and Rindova, 2003; Singh et al., 1986). However, legitimacy does have inconsistent output: it may improve organizational effectiveness, even when not improving organizational efficiency. The institutional view has been criticized for deprecating the fact that organizations prioritize different values, due to pressurizing from different institutional forces. (Sonpar et al., 2010).

The strategic approach to legitimacy is more instrumental and active, with two organization theoretical perspectives: the Resource Dependence Theory (RDT), with seminal work by Dowling and Pfeffer (1975) and Pfeffer and Salancik (1978) and the Stakeholder theory by Freeman (1984) and Mitchell et al. (1997) (Sonpar et al., 2010). RDT is very intertwined with contingency theory, having a number of fundamental assumptions. Furthermore, some of the more recent work in contingency theory builds on RDT. They both discuss the role of environmental uncertainty and dependencies/demand. (Sonpar et al., 2010). Stakeholder theory has a *"managerial perspective and emphasizes ways in which organizations instrumentally manipulate and deploy evocative symbols in order to garner societal support"* (Suchman, 1995, p. 572).

The strategic approach has often *"been integrated with the institutional approach to provide a theoretical rationale behind how and why actors may exercise discretion despite institutional constraints, in other words, acting in a manner not fully congruent with institutional expectations"* (Sonpar et al., 2010, p. 3). According to Suchman (1995), there are three types of organizational legitimacy: pragmatic, moral and cognitive. Pragmatic legitimacy is based on the self-interested calculations of an organization's most immediate audiences. Moral legitimacy is based on the idea of an activity being the "right thing to do". Cognitive legitimacy is based on the comprehensibility of a chaotic social world and taken-for-grantedness. (Suchman, 1995). Organizational legitimacy is also a controversial phenomenon, as Sonpar et al. (2010) claim that not only is the optimal level of legitimacy-seeking behaviours necessary for organizational effectiveness, yet with excessive focus, it may lead to mismanagement of stakeholders, in turn having a negative impact on effectiveness.

According to Zimmerman and Zeitz (2002), the traditional view on legitimacy has been dichotomous: an organization is either legitimate or it is not, yet they argue that legitimacy is a

continuous variable ranging in value from low to high, i.e. a continuum. The view in this dissertation is based on the latter.

2.2.2 Legitimacy building and collapse in networks

According to Gebert-Persson and Káptalan-Nagy (2016), Sharma (1991) stated two decades ago that *"without legitimacy the network will not be willing to supply resources."* (Gebert-Persson and Káptalan-Nagy, 2016, p. 302) Legitimation is an initiated process, which when acting by strategic choice, is called strategic legitimation (Zimmerman and Zeitz, 2002). Suchman (1995) presents three views of legitimation: gaining or building legitimacy, maintaining legitimacy and repairing legitimacy, all with their own challenges.

In this dissertation, the focus is limited to legitimacy building. According to Gebert-Persson and Káptalan-Nagy (2016), particularly in the network context, legitimacy is an amalgam of the legitimating processes that ensue at firm and relationship level. Legitimacy can be gained in various processes, such as organizing, selecting counterparts and influencing laws, rules, norms and perceptions. (Gebert-Persson and Káptalan-Nagy, 2016). In this dissertation, the *legitimacy building in networks* is defined as a *type of legitimation, which encompasses a process or processes* (Zimmerman and Zeitz, 2002) *of conscious acts of justification* (Kumar and Das, 2007) *of and within a network, such as negotiations and agreeing, in order to gain legitimacy, i.e. social approval.*

In research, *"the success of networks to obtain results at network level has gotten less attention"* (van Raaij, 2006, p. 250). According to van Raaij (2006), network performance or effectiveness has been reported at the network level with both objective and subjective measures (e.g. Provan and Milward, 1995). Objective measures include network stability, termination and financial gains, indicating firms' economic interest or the psychological benefits of participation, and subjective measures, which are based on the perception of one or more stakeholders. These subjective measures based on perceptions use various criteria, such as outcome criteria of goal accomplishment and stakeholder satisfaction, an input criterion of sufficient resources and a process criterion of the absence of disturbing relations. (van Raaij, 2006).

In general, research on whole networks is scarce (Kenis et al., 2009; Provan et al., 2007), therefore there are only a few reports of their dissolution or demise. In their review of the empirical literature on whole networks, Provan et al. (2007) presented only two studies of network failure as an outcome by Human and Provan (2000) and Baum et al. (2003). Human and Provan (2000) studied the

collapse of legitimacy in a multilateral network by comparing two networks with different strategies of network legitimacy: one that succeeded and one that did not, yet they called it the "demise" or "dissolution" of a network rather than "failure". Baum et al. (2003) studied one network with several sub-networks and focused on the emergence of a small world network. However, there are a few studies that have presented a similar type of concepts, which contribute to a network's success, or in turn, its dissolution. Human and Provan (2000) discuss network legitimacy building using three dimensions, whereas van Raaij (2006) writes of three norms that network members use, and Valkokari (2015a) mentions two dimensions of network dynamics. Together these three studies result in a theoretical framework for legitimacy building in networks, which is based on both organization theories used for explaining network phenomena, as well as organizational sociology explaining legitimacy in organizations. Dacin et al. (2007) pointed out that despite the vast literature on strategic alliances, little attention has been paid to the legitimacy-based functions of alliances.

2.2.3 Systematic literature review on network and alliance legitimacy

In its entirety, the field of management and its increasing body of knowledge is regarded fragmented (Rousseau, 1997), transdiciplinary (Whitley 2000), interdependent from advancements in the social sciences and divergent (Tranfield et al., 2003). Therefore, grasping the relevant literature on any of its areas is difficult and thus should be addressed with various methods.

As mentioned earlier, although organizational legitimacy has been widely studied, network legitimacy, particularly in whole networks, has not. Therefore, the three main backbone studies of the theoretical framework were discovered by approaches regarded by Greenhalgh and Peacock (2005) as "snowballing" and informal approaches. The article of Human and Provan (2000) was discovered by browsing the literature on networks and whole networks, and particularly by using "snowball" methods, which include pursuing references of references and electronic citation tracking of the review article by Provan et al., (2007) of *"Interorganizational Networks at the Network Level: A Review of the Empirical Literature on Whole Networks"*. Moreover, snowballing the other articles by Provan and his colleagues (e.g. Kenis et al., 2009; Provan and Kenis, 2008; Raab and Kenis, 2009) whose studies mostly concern networks in public management, led to the discovery of the article of van Raaij (2006), *"Three norms that network members use"*. Besides snowballing, Greenhalgh and Peacock (2005) also suggested informal approaches such as browsing, "asking around," being alert to serendipitous discovery, and using sources that are both known or recommended by colleagues. Therefore, as the author of *"Describing network dynamics in three*

different business nets", Valkokari, (2015a) was the Program manager of *"REBUS – Towards relational business networks"* (DIMECC - Digital, Internet, 2017), being part of the REBUS research community led to familiarization with her study of the two dimensions of network dynamics.

According to Tranfield et al. (2003), reviews in management research have traditionally been 'narrative', thus lacking thoroughness, rigour and sensibility, and often also being biased. However, in the last fifteen years the specific principles of the systematic review methodology have been increasingly applied in management research in addition to snowballing and informal approaches. This interest toward systematic reviews has been spawned by work in medical science, where this methodology was applied in the late 1980s in order to improve the quality of the review process. The systematic method for literature review aims at locating all the relevant studies without the biased view of the researcher by making explicit the values and assumptions that consolidate a review. Unlike narrative reviews, systematic reviews adopt a replicable, scientific and transparent process in order to minimize bias, furthermore offering an audit trail for reviewers. However, besides medical science, systematic reviews have traditionally been applied in fields and disciplines privileging a positivist and quantitative tradition. Thus, their adoption even in medicine, let alone in social sciences, is also seen in a negative light. Tightly planned literature reviews have been regarded as a way of inhibiting researchers' capacity to explore, discover and develop ideas. (Tranfield et al., 2003). Furthermore, according to Greenhalgh and Peacock (2005) it is argued in medical science that systematic reviews do not pick up all the important papers, thus other approaches should be applied, too. Using all these methods together can significantly expand the yield and efficiency of search efforts and prove their power in identifying high quality sources in obscure locations (Greenhalgh and Peacock, 2005).

Taking into account the advantages and disadvantages that different literature review methods generate, in order to make sure that no present work was excluded from this dissertation, in addition to the snowballing and informal literature search, the author also conducted a systematic literature review on November 23–24, 2016, on the subject of network legitimacy. Since alliance literature may provide some valuable additional information, alliance legitimacy was also included in the scope of the literature review.

In practice, electronic databases were used for systematic literature review for locating the studies. The selected databases were: EBSCO, Web of Science (WOS) and Scopus. In order to find the

relevant studies and use the databases, some search strings were generated. The search strings were used only for the title of the article, with the assumption that if the article or book chapter covered network or alliance legitimacy, those concepts would appear in the title. The first search was carried out with the string of

"network* AND "legitim*"

and the second

"allianc*" AND *legitim*"

The Boolean operator AND was used and also the asterisk (*) to cover variants of the terms under study, such as networks, networking, alliance, alliancing, legitimacy, legitimating, legitimation etc. The first part ("network*" or "allianc*") of the search string was aimed at delimiting the search, particularly in network-level studies as legitimacy is also widely studied at the organizational level.

The search was limited to only business and management databases, therefore for EBSCO, the "Business source complete" was used, for WOS the search was refined to "Business, Management and Sociology" areas, and for Scopus to "Business management and Accounting". The database inquiry was not limited to any time span, signifying that the aim was to include all possible articles and book chapters that covered the topic regardless of their time of publication. The search results of the database inquiry are presented in Table 3.

A total of 69 hits, mostly of journal articles with some book chapters, were discovered from the databases, 49 regarding network legitimacy and 20 regarding alliance legitimacy. A selection and evaluation process was defined with the creation of explicit inclusion and exclusion criteria for the dataset (Denyer and Tranfield, 2009). The inclusion criteria were 1) the publication was in English, and 2) the publication had to discuss the legitimacy or legitimation at network or alliance level, not organizational or individual level. The evaluation of the papers was carried out in four stages. First, the title of the paper was reviewed along with the journal it was published in and was either excluded or included. In the second phase, the abstract was viewed and the publication was either included or excluded. The publications that were included in the second phase were then read. In the third phase, a total of 12 papers for the network legitimacy search and two for the alliance legitimacy search were read.

Table 3. Results of the database search

Database	***Number of hits network* AND legitim****	***Number of hits network* AND legitim****
EBSCOhost	34	8
Scopus	28	6
WOS	19	6
Total	49	20
Duplicates subtracted	31	9
Excluded due to language	1	1
Excluded due to title	20	5
No abstract	1	
No access	2	
Excluded due to abstract	12	3
Excluded due to article	9	1
Included	3	1

The papers on network legitimacy that were excluded at this stage covered e.g. organizational legitimacy. For example Low and his colleagues have written four journal articles regarding organizational legitimacy in the network context (Low, 2010; Low et al., 2007; Low and Johnston, 2010, 2008). Also, the excluded articles discussed the importance of networks and legitimacy diffusion in the context of corporate entrepreneurship by Hornsby et al. (2013) and in new ventures by Bloodgood et al. (2016). Additionally, the journal articles read but excluded covered various aspects of legitimacy, such as knowledge legitimacy within learning networks by Tregaskis (2003), gaining legitimacy of sustainable development via supply network evolution by Crespin-Mazet and Dontenwill (2012) and legitimacy in the context of credibility in policy-driven innovation networks by van Rijnsoever et al. (2014). In the fourth phase, the articles and book chapters included in the theoretical framework as results of the systematic literature review were listed in Table 4.

The two articles on alliance legitimacy that were read covered the legitimacy of strategic alliances by Dacin et al. (2007) and interpartner legitimacy in strategic alliance by Kumar and Das (2007). Dacin et al. (2007) identified five types of legitimacy needs, i.e. market, relational, social, investment and alliance, *"that are identifiable conditions under which the firms need legitimacy"* (Dacin et al., 2007, p. 170), particularly in alliance formation. The firm may have several of these distinct legitimacy needs in parallel, and firms may enter multiple alliances simultaneously.

Table 4. Articles or book chapters included in the systematic literature review

Included in the search of	***Article or book chapter***	***Topic covered***
network AND legitim**	1. Human, S.E., Provan, K.G., 2000. Legitimacy Building in the Evolution of Small-Firm Multilateral Networks: A Comparative Study of Success and Demise. Adm. Sci. Q. 45, 327.	Legitimacy building in whole networks
	2. Gebert-Persson, S., Káptalan-Nagy, E., 2016. Legitimacy in the business network context in Extending the Business Network Approach: New Territories, New Technologies, New Terms.	Interpartner legitimacy by Kumar and Das (2007)
	3. Gebert-Persson, S.G., Lundberg, H., Andresen, E., 2011. Interpartner legitimacy in regional strategic networks. Industrial Marketing Management, Vol. 40.	Interpartner legitimacy by Kumar and Das (2007)
allianc AND legitim**	1. Kumar, R., Das, T.K., 2007. Interpartner legitimacy in the alliance development process. J. Manag. Stud. 44, 1425–1453.	Interpartner legitimacy

Furthermore, the included article by Kumar and Das (2007) proposed three types of interpartner legitimacy: pragmatic, moral and cognitive. Building on the work of Kumar and Das (2007), Gebert-Persson and her colleagues (Gebert-Persson et al., 2011) discussed the influence of interpartner legitimacy on the formation and development processes of regional strategic networks (RSNs) on the network level. In their article, Gebert-Persson and Káptalan-Nagy (2016) discuss the network context from the viewpoint of focal companies – not that of the whole network as such. Furthermore, the actors being local government, local companies and local universities, RSNs are commonly formed for the purpose of regional development by means of increasing the competitiveness of an industry sector or a certain type of operation, which often receive public financial support, especially for hub operations. In RSNs, there is a strategic intent, but the real reason is a lack of relationships and cooperation among the actors. Therefore, RSNs could be considered as whole networks, yet the boundaries of membership are not clear. (Gebert-Persson and Káptalan-Nagy, 2016). However, the one article and one book chapter of Gebert-Persson and her colleagues (Gebert-Persson and Káptalan-Nagy, 2016; Gebert-Persson et al., 2011) did not cover legitimacy building in whole networks per se, although they were included as part of the papers covering network legitimacy, since they discussed the three types of interpartner legitimacy defined by Kumar and Das (2007).

Therefore, their views have also been included in the theoretical framework of this study. Although the five legitimacy needs introduced by Dacin et al. (2007) are not exclusive to the three legitimacy models of Kumar and Das (2007), it was decided to include the latter in the theoretical framework of this study as it had already previously been used in network study by Gebert-Persson et al. (2011). In the end, besides the paper of Human and Provan (2000), there were no articles that covered a study of the legitimacy of whole networks.

2.2.4 Theoretical framework of network legitimacy building during its formation

The theoretical framework (Figure 8), was compiled from the three studies mentioned earlier: network legitimacy building with three dimensions by Human and Provan (2000), three norms that network members use by van Raaij (2006), and two dimensions of network dynamics by Valkokari, (2015a).

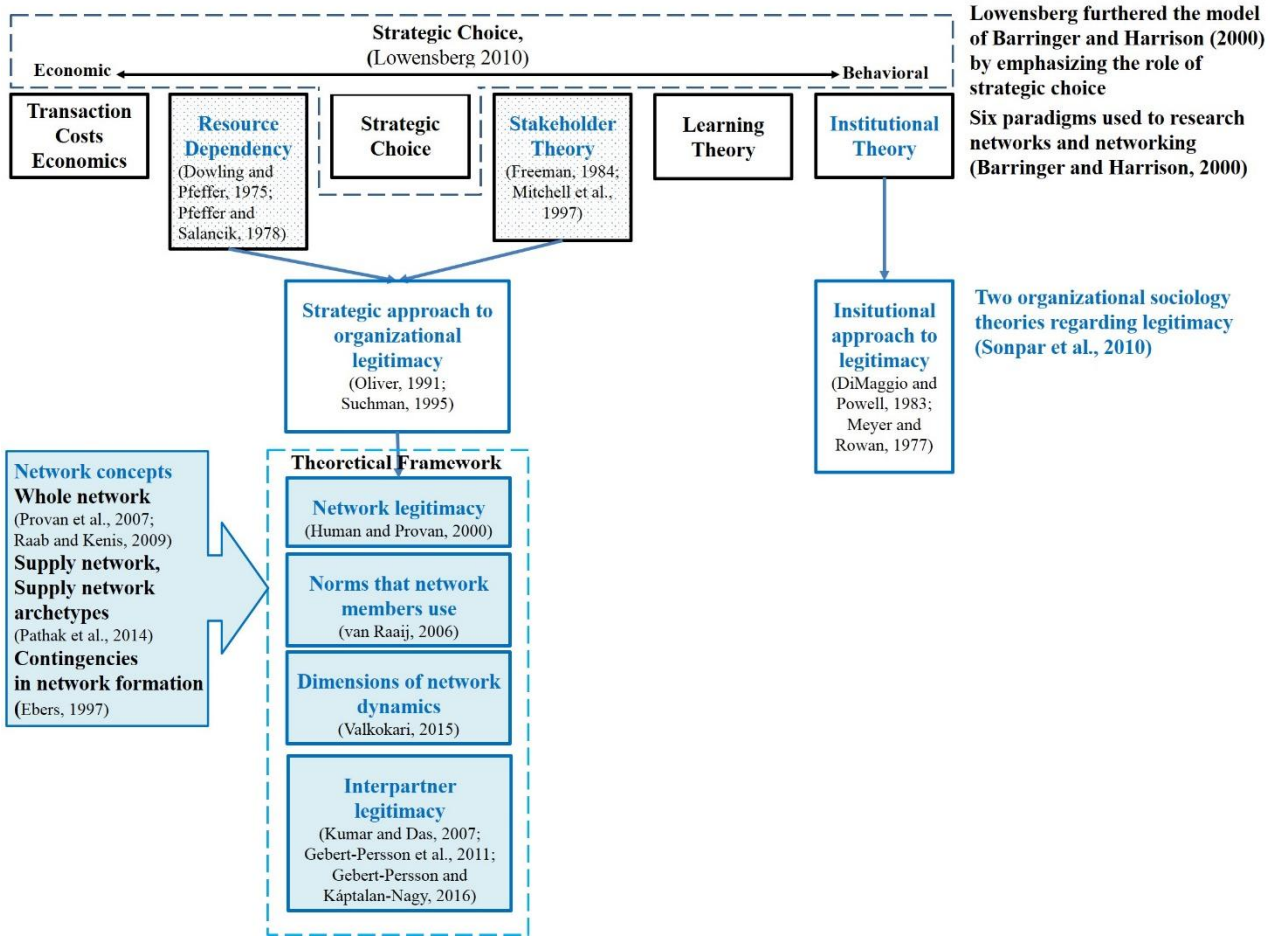

Figure 8. The theoretical framework induced from the organization and network theories

Additionally to those three studies, the concept of interpartner legitimacy discovered in the systematic literature review in works by Kumar and Das (2007), Gebert-Persson et al. (2011) and (Gebert-Persson and Káptalan-Nagy, 2016) was also added to the theoretical framework. Therefore, as a result, the theoretical framework includes the three pre-network legitimacy dimensions and four formation phase legitimacy-building dimensions (see Figure 8), with the addition of three interpartner legitimacy types. The three pre-network legitimacy dimensions are 1) the climate for co-operation, 2) the legitimacy of industry, and 3) the existence of preliminary support by potential stakeholders. The four formation phase legitimacy-building dimensions are 1) the network as a form, 2) the network as an entity, 3) the network as an interaction, and 4) the network as strategic intent. The three interpartner legitimacy types are pragmatic, moral and cognitive interpartner legitimacy.

2.2.5 The dimensions of legitimacy building in networks in pre-network and formation phases

Suchman (1995) defined legitimacy as *"a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions"* (Suchman, 1995, p. 574). Consistent with the seminal work of Suchman, Human and Provan (2000) have defined legitimacy in network context as *"a generalized perception that the actions, activities, and structure of a network are desirable and appropriate"* (Human and Provan, 2000, p. 328). The definition of Human and Provan (2000) is also used in this study. Like Suchman, Human and Provan (2000) also place their view on legitimacy between the institutional and strategic traditions. According to Human and Provan (2000), legitimacy represents the status and credibility of the network and network activities as comprehended by the member firms inside, and by for example funders and customers outside the network; the acceptance of the stakeholders results in cognitive support, commitment and resources, which in the end qualify whether a network will survive as an inter-organizational form. Human and Provan (2000) state that the legitimacy challenges that networks meet are similar, but networks deal with these challenges by adopting unique strategies**,** and they propose two strategies that may overlap and be employed as a dual legitimacy strategy. First, the inside-out strategy, where the legitimacy-building mechanism is mainly internally oriented and initiated among members, although it does not disregard external legitimacy demands, but also gradually enhances external legitimacy. Second, the outside-in strategy, is the reverse and is based on the presumption that external success, such as in raising money or generating customers, will, as a consequence, develop members' interactions and thus legitimize the interaction process. However, Human and Provan (2000) point out that both

strategic orientations of inside-out and outside-in are needed for the balanced legitimacy of a network. Yet they claim that dual legitimacy strategy should not be pursued until there is a primary legitimacy base, so building internal legitimacy early on is critical for ultimate network success and sustainment.

According to Human and Provan (2000), in earlier life-cycle research it has been discovered that network legitimacy building has several loose stages of evolution: 1) pre-network, 2) network formation, 3) early growth, 4) emerging legitimacy deficiencies, and 5) sustainment or demise. They suggest that legitimacy consists of three conceptually distinct dimensions: 1) the network as a form, 2) the network as an entity and 3) the network as an interaction. The needs and interests of the dominant stakeholders in the pre-network organizational field reflect the strategic orientation of the network for building legitimacy, i.e. inside-out or outside-in, which emerges during network formation. In the network formation phase, regardless of the network's strategic orientation, the emphasis is on legitimizing the network as a form or the network as an entity, whereas in the early growth the emphasis is on the network as an interaction. (Human and Provan, 2000).

In the pre-network phase, in the organizational field, the "initial conditions" are significant. Human and Provan (2000) presented three critical issues for the direction that legitimacy building might take (Table 5). First, the pre-network climate for co-operation, since cooperation in the pre-network organizational field might already be legitimized and legitimacy of cooperation might be used as a competitive strategy. They studied this in terms of pre-network involvement, network density scores and the multiplexity of relationships. Second, the legitimacy of the industry in the location where the network would emerge, which they studied in terms of the interest level of external constituencies, such as state legislators and public funding agencies. Third, the existence of preliminary support by potential key stakeholders.(Human and Provan, 2000).

In the network formation phase, according to Human and Provan (2000), two of the three dimensions of legitimacy are focal: the legitimacy of 1) the network as a form and 2) the network as an entity. Establishing the legitimacy of the network concept, or the network as a form, is important early on and also has to be conveyed to new and potential members as well as to other outsiders that might offer support. As a concept, it is, according to Human and Provan (2000), similar to the concept presented by Suchman (1995) of sector building by individual firms in an industry or sector, which possesses minimal external acceptance. They see, that in order for the network concept or the network as a form dimension to become legitimated, both the network mem-

Table 5. The three dimensions of legitimacy building in networks in the pre-network phase

Legitimacy building in networks *(Human and Provan, 2000)*	***The pre-network climate for co-operation***	***The legitimacy of industry***	***The existence of preliminary support by potential key stakeholders***
	Pre-network involvement, network density, multiplexity of relationships	Interest level of external constituencies, e.g. state legislators and public funding agencies	

bers as well as its external groups, such as funders, need to understand it well. Van Raaij (2006) uses the concept of "the norm of network legitimacy", but describes it as the network as an organizational form, similarly to Human and Provan (2000). Van Raaij (2006) claims that from network inception onwards, the internal legitimacy of the network's form is one of the important conditions leading to the network as a successful governance form, which also relates to the network's climate and activating capacity. Human and Provan (2000) report that the primary mechanism for building legitimacy as the network as a form is through the actions and credibility of the network administrative organization (NAO), which can be set up for example by hiring.

Besides the legitimacy of the network concept or form, the legitimacy of the network as an entity should also be established, which signifies that the network has to develop a recognizable identity (Human and Provan 2000). The network's identity and identity creation in networks have also been studied earlier, e.g. through network-level knowledge-sharing routines, and identity has been defined as *"a shared sense of purpose with the collective"* (Dyer and Nobeoka, 2000, p. 352). Similarly, Valkokari (2015a), in her study of network dynamics and their underlying mechanisms in 'business nets' as she calls them, has presented a shared identity in addition to strategic intent as the two dimensions of network dynamics. This shared identity and common mindset among actors emerge in long-lasting and interactive collaboration process. The shared identity can either support the renewal of the 'business net' and generate new targets or functions for the network, or without joint goals break the network down. (Valkokari, 2015a). Van Raaij (2006) uses the concept of "the norm of network climate", and describes that both the network organizations and simultaneously the network as a whole should benefit from the network participation. To her, the network climate

refers to making decisions that benefit the network's functioning beyond the organizational interest, thus the climate requires a balance of these two views. Human and Provan (2000) point out that, in the formation phase, the key stakeholders, both internal and external, play an important role, and that the legitimizing interactions among the network members also start at this phase.

Regarding the identity formation of a network, Raab and Kenis (2009) point out a few special characteristics. They claim that as goal-directed bounded social systems, both organizations and networks follow similar patterns in their identity formation, yet in a network, the formation has three levels: the network, the organization and the individual, all of which play a major role in the processes. Raab and Kenis (2009) also raise the issue of network membership and boundaries. They consider that network identity formation only takes place on the basis of inclusion, and in turn, exclusion, requiring the definition of who or what does and does not belong to the social entity of the network, although they recognize that in whole networks the boundaries often remain flexible and fluid. Additionally, goal-directed networks often have a temporary character or limited duration: they are dissolved after a certain period of time or after reaching an earlier set goal (Raab and Kenis, 2009).

In the early growth period, the legitimacy of the network interaction becomes increasingly important, yet legitimating the network as a form and the network as an entity continues (Human and Provan 2000). According to Human and Provan (2000), interactions are especially critical to multilateral networks, as the established and sustained number of relationships may be in the dozens and also include competitors. Therefore, to ensure the collaboration within the network, the interaction process itself has to be legitimized. Van Raaij (2006) uses the concept of "the norm of activating capacity", meaning that the members initiate and reiterate network activities, thus ensuring the survival of the network. In her study of network dynamics, Valkokari (2015a) also emphasizes that network dynamics are created in different ways in different network types, yet through activities and interactions between network members.

In some phase of the network, legitimacy deficiencies may also occur due to e.g. major legitimacy crises or absence of external support. For the sustainment or demise phase of the network, Human and Provan (2000) presented a few alternative actions in order to sustain the network with an outside strategy; the replacement of the network director, reconsideration of the funding structures e.g. working for government grants for external orientation and reformation of the membership criteria, and the fulfilment of the needs of the members as internal strategy.

As the other part of the concept “the norm of network legitimacy”, Van Raaij (2006) presents the topic of the network to be legitimized, which could signify a project plan, for example. Van Raaij (2006) claims that from network inception, not only the internal legitimacy of the network’s form, but also the network’s topic is one of the important conditions leading to the network as a successful governance form. In addition to the form, the topic is also related to the network’s climate and activating capacity. Valkokari (2015a) calls it a built joint vision for the future, i.e. the strategic intent of the business network that is based on the members’ business needs. She sees, that the building of strategic intent is a process of networking and negotiation in interaction, which is manifested in a future plan with joint development activities. Valkokari (2015a) makes a distinction between other concepts of strategic management and strategic intent, emphasizing that intent is based on joint sense making between multiple organizational levels, and it represents a proactive mode of strategizing. Although Human and Provan (2000) do not include the goal or joint strategic vision of the network as one of the dimensions of their legitimacy concept, joint goal setting and especially commitment to goals is a major part of their study of network legitimacy. They mention for instance that *“while not all network firms need to interact directly with one another to succeed, there must be a sense of collective "networkness," by which member firms see themselves as part of the network and are committed to network-level goals.”* (Human and Provan, 2000, p. 329)

Following the studies by Human and Provan (2000) and van Raaij (2006), the concept of legitimacy and the three dimensions are used to comprise a framework for legitimacy building in a whole network during its formation: 1) the network as a form, 2) the network as an entity and 3) the network as an interaction. The fourth dimension, 4) the network as a strategic intent, is based on the studies by van Raaij (2006) and Valkokari (2015a). The four dimensions are described in Table 6.

Van Raaij (2006) suggested that *“only the networks that were initiated by the network members themselves and those that were highly internally legitimized by professionals and manager directors were able to activate themselves and had a beneficial network climate.”* (van Raaij, 2006, p. 267) That indicates that all four legitimacy dimensions, the network as a form, the network as an entity, the network as an interaction and the network as a strategic intent, are essential for network legitimacy building.

Table 6. The four dimensions of legitimacy building in networks in the network formation phase

Legitimacy building in networks	***The network as a form***	***The network as an entity***	***The network as an interaction***	***The network as a strategic intent***
Legitimacy (Human and Provan, 2000)	Network as a form	Network as an entity	Network as an interaction	
Norms used by network members (van Raaij, 2006)	The norm of network legitimacy: the network as an organizational form	The norm of network climate: organizations ought to benefit individually, but simultaneously decisions beneficial for the network as a whole	The norm of activating capacity: network members who initiate and reiterate network activities	The norm of network legitimacy: the topic addressed by the network
Dimensions of network dynamics (Valkokari, 2015a)		Shared identity		Strategic intent

Regarding the context of the prior research on network legitimacy building or their dimensions (Table 7) as previously mentioned, Human and Provan (2000) conducted their longitudinal study of network legitimacy in two networks, Alphanet and Betanet, in the secondary wood-products industry, comprising firms that manufacture products. Although the network organizations were manufacturing products, they were not necessarily part of the same supply network, but probably part of various supply networks. Human and Provan (2000) characterized their case networks as multilateral, broker or NAO-led SME networks. In their literature review of whole networks, Provan et al. (2007) qualified the networks of Human and Provan (2000) as whole networks. However, in their study, Human and Provan (2000) included only those companies, 19 in Alphanet and 23 in Betanet, that were involved in the network activities. The network idea was totally foreign to this industry, thus their study provides insight into network legitimacy building in completely new, unknown circumstances.

Table 7. The network characteristics of three prior studies of network legitimacy building or its dimensions

	Whole networks	***Network connections***	***Network supply type***
Human and Provan (2000) *2 case networks*	Whole networks	Multilateral SME networks with an NAO	Each network: one or several supply networks
van Raaij (2006) *4 case networks*	2 whole networks, 2 non-whole networks	Multilateral health care organizations with an NAO	Service supply networks, Knowledge networks
Valkokari (2015a) *3 case networks*	Strategic 'business nets' i.e. whole networks	2 core company driven multilateral networks mostly with SMEs	1: core product supplier and its service suppliers 2: core product supplier and sub-suppliers, even competitors
		1 multilateral network mostly with SMEs	3: equal network companies competing with each other

Valkokari (2015a) studied the two dimensions of strategic intent and identity as part of network dynamics in three case networks, which included one core company and 3–9 mostly SME network organizations. At least two of them were focal company driven supply networks or 'business nets' as Valkokari calls them. The definition of business nets distinguishes them as intentionally created business networks from open macro-level networks of organizations (Möller et al., 2005), with a connection to each other for joint business (Halinen and Törnroos, 2005) and with a specific set of activities (Möller and Rajala, 2007). Therefore, 'business nets' do share the attributes of whole networks, defined by Raab and Kenis (2009) as consciously created goal-directed networks that form a separate identity and act collectively. However, Valkokari (2015a) separately and additionally also emphasizes the need for the network to have joint strategic business targets with relation to the definition of strategic 'business nets'. Although strategic is mentioned in the name, perhaps Valkokari feels that the purpose of doing business together is not strategic enough or somewhat limits the scope of strategic 'business nets', for example, regarding joint R&D or capability-building endeavours. However, in her study, Valkokari (2015a) has regarded the three

case networks as strategic ‘business nets’. As the networks did have a strategic intent, even a shared identity, with somewhat collective action, although only some of the companies were active and the fact that the conscious or intentional creation was not particularly highlighted, we might also regard Valkokari’s case networks as small whole networks. They could also be regarded as multilateral, like the networks in Human and Provan's work (2000), since the connections were mostly multiplex. The study of van Raaij (2006) of the norms of network members was carried out in sub-regional service delivery networks for health care. Although van Raaij did not specifically call the four networks in her study whole or strategic ‘business nets’, features of conscious creation, goal direction, a separate identity and collective acting could be identified in two out of four of her case networks. Van Raaij (2006) did not emphasize the multilateralism of the networks, which is the inherent character of knowledge networks of service supply networks, but she did point out the existence of a broker organization or NAO.

2.2.6 The three types of interpartner legitimacy

Interpartner legitimacy is *“the mutual acknowledgment by the alliance partners that their actions are proper in the developmental processes of the alliance.”* (Kumar and Das, 2007, p. 1425) Interpartner legitimacy has also been used in the study of Regional Strategic Networks by Gebert-Persson et al. (2011), therefore it is also applied in this study. *“Legitimation processes refer to the acts of justification used by organizations to maintain their social approval”* (Kumar and Das, 2007, p. 1430). *“Hence, interpartner legitimacy is related to an actor's activities being socially accepted within certain contexts”* (Gebert-Persson et al., 2011, p. 1025). Gebert-Persson et al. (2011) point out that being a perception is a characteristic of legitimacy; however, it is not necessarily experience-based, *“but rather an evaluation of an actor as being worthy of trust, based on the norms, values, rules and regulations that exist within a specific context”* (Gebert-Persson et al., 2011, p. 1026). Legitimacy is not only a state of collective judgment at any given time but also a process that evolves during interactions (Gebert-Persson and Káptalan-Nagy, 2016; Kumar and Das, 2007). Legitimacy depends on the organization’s internal and *“external direct and indirect relationships within the business network context and the broader environment”*, and which *“can be analyzed at different levels: firm, relationship, business network context and aggregated”* (Gebert-Persson and Káptalan-Nagy, 2016, p. 305). Gebert-Persson and Káptalan-Nagy (2016) believe that legitimacy at the level of a business network context can be considered as an amalgam of the legitimating processes ensuing at the firm and relationship level and emphasize the role of interaction in the legitimating process.

Dacin et al. (2007) note that legitimacy is akin to, but distinct from, the concepts of reputation and prestige. In the network approach, they also view trust as a similar concept to legitimacy, *"both ways to decrease perceptions of risk and uncertainty"* (Gebert-Persson and Káptalan-Nagy, 2016, p. 307). The difference between these two concepts is that legitimacy is the antecedent of relationship and trust building, a perception in a business network context, which can be built upon reputation; whereas, trust exists in the relationship boundaries, requires direct relationship experience and does not necessarily appear in a relationship (Gebert-Persson and Káptalan-Nagy, 2016). Gebert-Persson and Káptalan-Nagy (2016) consider that gaining legitimacy for an organization happens 1) within the organizing process via the social process of trust building, 2) in the process of selecting counterparts, i.e. framing the business network context, and also 3) influencing the laws, rules, norms and perceptions within the network. They also stress the role of existing relationships on legitimacy forming and find also that public relations are an important source of influence, as well as relations with governments and public authorities. Although trust is often stressed in the network context, Gebert-Persson et al. (2011) emphasize the importance of the legitimacy concept, which helps to *"identify both the initial processes of negotiations on the rules and norms which influence the future possibilities for interactions and commitment as well as important conditions for the survival and purpose of multi-actor interaction" and "further the understanding of if and how the common grounds for a network are established."* (Gebert-Persson et al., 2011, p. 1026) As a concept that develops alongside network formation, interpartner legitimacy is *"i.e. the process of agreeing on the goals and visions and on justice behaviors so that the RSN can eventually develop into one that is perceived as inevitable to be a member of"* (Gebert-Persson et al., 2011, p. 1030).

Kumar and Das (2007) proposed three types of interpartner legitimacy: pragmatic, moral and cognitive, which Gebert-Persson et al. (2011) discuss in the context of regional strategic networks (RSNs). Pragmatic interpartner legitimacy *"alliance members see their involvement and contribution as furthering their own interests and the interests of the (larger) alliance"* (Kumar and Das, 2007, p. 1434), and it is formed as the actors agree on common goals and is particularly important in the formation phase of the network (or alliance) (Gebert-Persson et al., 2011). Therefore, the pragmatic interpartner legitimacy to be established is caused by a dual interest: the involvement in and contribution to the network, firstly as a way to develop its own interests and secondly the interests of the network, thus the organization should perceive the goals of the network as also beneficial for itself. In that case the involvement in and contribution to the network are seen

as a way to reach these dual goals. (Gebert-Persson et al., 2011). Apart from these goals, Gebert-Persson et al. (2011) have presented additional issues that may enable or hinder pragmatic interpartner legitimacy. They include a shared history of each other's resources and competencies, which may assist the formation, competition amongst organizations, which may hinder the networking, yet may be diminished by refocusing the work, reducing the overlapping and competitive parts within the network, and the opportunity to influence (local) politicians may enable networking. Gebert-Persson et al. (2011) consider the complexities of agreeing on shared goals and visions to be the most difficult in spite of shared interests, which is affected by the individual member's self-interest in committing resources. They consider a low commitment to the network as a sign of low pragmatic legitimacy.

In moral interpartner legitimacy, *"member firms form judgments about whether the specific alliance is the right thing to do"* (Kumar and Das, 2007, p. 1434). It is based on the mutual acknowledgment of how other members are to behave and how they are behaving, whether the actions are proper, and on the other hand, that participating is the "right" thing to do in order to reach the objectives (Gebert-Persson et al., 2011). Furthermore, the level of moral interpartner legitimacy may vary, and low moral interpartner legitimacy may be manifested as a *"lack of dedication or belief in the cause"* (Gebert-Persson et al., 2011, p. 1026). According to Gebert-Persson et al. (2011), moral interpartner legitimacy can be increased by focusing on shared values and establishing common norms and directions, and for example by excluding participants that are not willing to refrain from violating the norms of the network due to competition etc. In cognitive interpartner legitimacy *"alliance is seen as natural and necessary within the larger strategic context of the alliance"* (Kumar and Das, 2007, p. 1434), which signifies that the network is perceived as inevitable and necessary to participate in and has become taken for granted (Kumar and Das, 2007).

According to Kumar and Das (2007), in particular pragmatic, and also moral interpartner legitimacies are significant in the initial negotiations during the formation phases of alliances and networks. They see, that in these stages, the interactions develop into relationships, thereby building a platform for the network, although participation should be in line with the organization's self-interest. Furthermore, compromised moral legitimacy may cause problems in the formation phase, yet it is mainly critical during the operational stage. The lack of moral legitimacy causes difficulties, especially if the actors fail to perceive that they could predict the behaviour of the other participants (Gebert-Persson et al., 2011; Kumar and Das, 2007). On the other hand, according to (Gebert-

Persson et al., 2011), cognitive interparner legitimacy is often reached after later stages of network development by the network members. All three interpartner legitimacy types will develop faster if the interactions with each other, which have resulted in norms, values and rules of accepted behaviours, are considered as positive experiences (Gebert-Persson et al., 2011). From that viewpoint of (Gebert-Persson et al. (2011), that network organizations that have a common history do have a different starting point compared to emerging networks without previous interactions, which confirms the Human and Provan's (2000) view of the differences in legitimacy building in emerging and whole networks with previous ties or networks. From the aspect of the three interpartner legitimacy types, building legitimacy that is based on self-interest may be more successful from bottom-up than top-down. Therefore, Gebert-Persson et al. (2011) emphasize the importance of finding common grounds on which to establish legitimacy for network forms of cooperation. Also, the cases of Gebert-Persson et al. (2011) pointed out that once the network interaction is no longer managed and regular, the network may cease to exist.

2.2.7 Analysis of prior empirical research on legitimacy building in whole supply networks

Here, the prior empirical research on networks, particularly whole supply networks and legitimacy building in them, is analysed and the choices made by the researcher regarding this dissertation are summarized.

Situated in the sector “Group behaviour – Sociology” in the scope of operational science and theory by Koontz (1980) within the plethora of theories used in management science and organizational theory, this dissertation aims at contributing to studies of networks, particularly whole networks, and their legitimacy building. In organization studies, both networks and legitimacy are widely studied subjects; therefore one could assume that also the subject under research, legitimacy building in whole networks, would provide at least several empirical studies. However, when analysing the prior literature on networks, the ambiguity of the subject as a concept is revealed. Forty years of research has resulted in many types of networks and network properties to study (Hämäläinen and Schienstock, 2000). There are multiple levels of analysis (Ibarra et al., 2005) with varying quantities of relationships (Contractor et al., 2006), in networks of individuals, or of units, or of organizations (Moliterno and Mahony, 2011) in major categories of social capital and network development research (Carpenter et al., 2012), for example. No wonder that such diversity has not resulted in any universally accepted definition (Cropper et al., 2009).

Complexity also describes the theorizing of networks. There are at least six different theory paradigms, varying from the economic to the behavioural end of the continuum explaining the formation of IORs; some paradigms are controversial and most of them are linked and interconnected with each other without any proven precedence or clear boundaries (cf. Barringer and Harrison, 2000; Cropper et al., 2009; Lowensberg, 2010; Nienhüser, 2008; Parmar et al., 2010). Additionally, researchers add confusion by using the term network theories for theories that explain other phenomena and outcomes via network characteristics, although network theories should be restricted only to those that explain the characteristics of networks (Raab and Kenis, 2009). Moreover, adding to the obscurity of network as a concept, there are two almost completely opposite views on networks and network theorizing. On the one hand, networks are seen as unmanageable emergent structures, whereas on the other hand they have strategic orientation (Huuskonen and Kourula, 2012). Also, their formation mechanisms are viewed either as serendipitous without collective identity or as consciously created and goal directed with a separate identity and collective action (Raab and Kenis, 2009). Therefore, network research forces the researcher to make several choices regarding network types in major categories of networks, level of analysis, views on manageability and network formation, theoretical paradigms to contribute to, even whether the research would contribute to the network theories in the first place. Of those choices, this dissertation belongs in network development research of organizational networks, analysing at the inter-organizational network level as an entity, viewing networks as manageable with strategic orientation and formed with intention, being goal directed with a separate identity and collective action, i.e. whole networks, aiming at contributing to network theories.

When looking at the amount of previous literature, it is noticeable that most of the empirical literature is about emerging networks, not those with strategic orientation or intentional development (Möller and Halinen, 1999; Möller and Svahn, 2003). However, the latter type of networks, especially those with a separate identity and collective action, i.e. whole networks, are a breed of their own with specific dynamics of evolution (Human and Provan, 2000; Provan et al., 2008, 2007; Raab and Kenis, 2009). Yet, there are only a handful of studies of whole networks, particularly at the inter-organizational network level (Provan et al., 2007; Raab and Kenis, 2009). In other words, there is a research gap in this particular type of organizational networks, i.e. whole networks. However, it is predicted that society will be one of whole networks (Raab and Kenis, 2009) and with only a few studies on them, any study of network level analysis of whole networks and their dynamics, such as development of structure or processes like trust building or legitimation,

outputs of success and dissolution etc., would benefit the research area greatly. A whole network, however, is too wide a concept to study at the network level in one dissertation, therefore the researcher has to choose one type and aspect of whole networks to study.

Research on supply networks provides an interesting type of whole network to observe, especially from the industrial management viewpoint. Therefore, a whole supply network was chosen as the type of whole network to study. From the previous studies, the four supply network archetypes of Pathak et al. (2014) in particular give a perspective on the versatile ways of network collaboration that industrial organizations might – and should – consider. Additionally, these four archetypes have different goals and processes, and therefore, different dynamics. Comprehending that successful networking can be carried out in various ways depending on the joint goals would benefit any network organization or NAO. Therefore, the model of supply network archetypes of Pathak et al. (2014) was added to the theoretical framework of this dissertation as a means to analyse the types of collaboration that a network has.

Legitimacy is a widely researched concept within organizational sociology with fragmented literature (Sonpar et al., 2010). Similarly to networks, there are several views on legitimacy for the researcher to take a stance on. First, legitimacy has a dual theory tradition of the institutionalist and strategic approach. As in this dissertation, the view on networks is strategic, so is the view on legitimacy. Thus, the theory paradigms that this dissertation contributes to are RDT and the Stakeholder theory. However, as mentioned in the context of network theory paradigms, the other theory paradigms are linked with those two theories, therefore the institutionalist view on legitimacy is not excluded. Secondly, in this dissertation, legitimacy is considered as a continuous variable, instead of taking the dichotomous view (cf. Zimmerman and Zeitz, 2002).

When combining networks and legitimacy both with a vast literature, one could assume that it would result in plenty of previous studies. However, although network legitimacy was pointed out early on as an important concept for network success (Gebert-Persson and Káptalan-Nagy, 2016; Sharma, 1991), the systematic literature review revealed that there are only a handful of studies on network and alliance legitimacy. Therefore, the basis of the theoretical framework of this dissertation is built upon the work of Human and Provan (2000), van Raaij (2006) and Valkokari (2015a). The research of van Raaij (2006) includes all the four dimensions of the formation phase (the network as a form, the network as an entity, the network as an interaction and the network as a strategic intent). However, their study was carried out in the context of expert service delivery networks in the public

health care branch, which has different dynamics than supply networks. Human and Provan's (2000) in-depth, longitudinal case study in two networks illustrates in great detail the dimensions of legitimacy building in the various phases of network development. However, their study does not take a stance on the goal setting, achievement and strategy work of the networks, which would be particularly interesting from the industrial management viewpoint. Therefore, besides these two studies of network legitimacy, the study of Valkokari (2015a) with a dimension of network dynamics was added to enhance the knowledge on both the identity dimension and particularly the strategic intent of networks within the theoretical framework. Viewing the three articles of Human and Provan (2000), van Raaij (2006) and Valkokari (2015a) critically, some viewpoints arise. For instance, although the strategic approach has existed side by side with the institutional approach since Suchman's seminal article (1995), Human and Provan (2000) have neglected the impact of strategy in their longitudinal study of network legitimacy. Naturally, it might be a conscious choice to concentrate on the institutional side, while their results revealed that the organizations in their studied networks barely understood the concept of operating in networks. However, despite its deficiencies regarding strategy, the article of Human and Provan (2000) is an in-depth and illustrative case study that covers multiple phases of network legitimacy building. As an article published in one of the top journals in Management, *"Administrative Science Quarterly"*, it contributes to the emerging network theory of whole networks. Despite its deficiencies the article of Human and Provan (2000) inspired this research to a great extent, both regarding network theory development as well as legitimacy as the point of view. Furthermore, the study of van Raaij (2006) was published in *"International Public Management Journal"*, thus aiming at discussing service networks in the public sector with grounded theory methodology. Therefore, the aim was not to contribute to the theory building of legitimacy of networks per se. However, her observations of public networks did to some extent respond to the views of Human and Provan (2000), therefore the article was also included as one of the three main articles of the theoretical framework of this research. Moreover, although the article of Valkokari (2015a) does not even mention legitimacy at all, however, the article deals with the strategic 'nets', which in this research are interpreted as whole networks. Besides the dimensions of network dynamics, i.e. the strategic intent and shared identity she introduces, while also discussing the interaction and forms of the networks, the views expressed in the article by Valkokari (2015a) are very close to the notion of legitimacy building. Perhaps rather using the concept of dimensions of network dynamics, she wanted to discuss cases that were nevertheless more in the context of strategic management than institutional theory, although the

article was published in the Scandinavian Journal of Management, which is open to many types of approaches and selection of theory.

As a concept, network legitimacy is more complex than organizational legitimacy (Gebert-Persson and Káptalan-Nagy, 2016). Therefore, the concept of interpartner legitimacy is also included in the theoretical framework, as it provides three types of justification for network organizations to evaluate their network partners and network as legitimate. In a case study, the aim is to understand not only what has happened, but why. Therefore, studies of the network formation process and the contingencies affecting each phase, as in the studies of Gray (1985), Larson (1992), and Snow and Thomas (1993), were also included as network concepts in the theoretical framework. Observing the contingencies within the case provides a fuller perspective on the enabling and hindering circumstances of the network under study.

To sum up the input of the previous research on legitimacy building in whole supply networks, the area is not completely unresearched, but there have been only a few in-depth case studies. Therefore, any additional case study would benefit the area, which is considered important due to the development trend of society towards whole networks and the impact that legitimacy has on a network's willingness to supply resources.

3 Research design and methodology

In this chapter, the design and methods regarding the empirical research are presented. Also, the research process is described in terms of the data collection and analysis. First, the underlying research philosophy and the selected research strategy are outlined. Second, the research design and selection of the research context are explained**.** Third, the data and methods of both qualitative and quantitative data collection are portrayed**,** including an illustration of the research process as a whole.

3.1 Philosophical assumptions of science

This dissertation is situated in the sector of "Group behaviour – Sociology" in the scope of operational science and theory within the plethora of theories used in management science and organizational theory by Koontz (1980). Thus, it belongs to social science[5]. Therefore, as part of social science research, the chosen philosophical program of this dissertation is pragmatism. This choice has been made because pragmatism as a philosophical program in social science allows the researcher to use a variety of methods: qualitative, quantitative or mixed methods (Morgan, 2014). Thus, pragmatism as a philosophical program provides multiple choices for the researcher to gather, analyse, and even mix different types of data in order to observe the research subject from various viewpoints and at divergent levels of analysis. Due to its coherent philosophy, *"that goes well beyond 'what works'"* (Morgan 2014, p.1051), pragmatism is regarded as a new paradigm, which will replace, yet not overwrite the older philosophy of knowledge approach (Morgan, 2014). The older philosophy of knowledge approach refers to Burrell and Morgan's (1979) ideas about four sets of different approaches in social sciences (Figure 9), that are based on philosophical assumptions: ontology, epistemology, human nature and methodology. Therefore, the ontological, epistemological[6] and human nature assumptions of social studies regarding this dissertation research are also reflected here in short.

Firstly, the ontological analysis of the research subject of this dissertation *"Legitimacy Building in a Whole Supply Network during its Formation Phase"* presupposes a research subject, whose results cannot be aimed to be generalized as the only truth, but to make a subjective interpretation aiming

[5] Auguste Comte (1798–1857) first used the term "sociology" in 1838 (Allardt, 1983, p. 11)
[6] The philosophy of science is based on ontological and epistemological analysis (Rauhala, 1990)

to explain the situation at hand. Ontology is *"a branch of philosophy concerned with the nature of being or existence; a particular theory about the nature and categories of being"* (Longman dictionary of English, 1991). Therefore, ontological analysis solves the basic nature of the research subject, the very essence of the phenomena under investigation (Burrell and Morgan, 1979), which leads to the selection of appropriate methods for testing. To sum up, the ontological view of this dissertation is more nominalism than realism, because in realism the reality is viewed external to the individual, but in nominalism it is regarded as a product of individual consciousness (Burrell and Morgan, 1979).

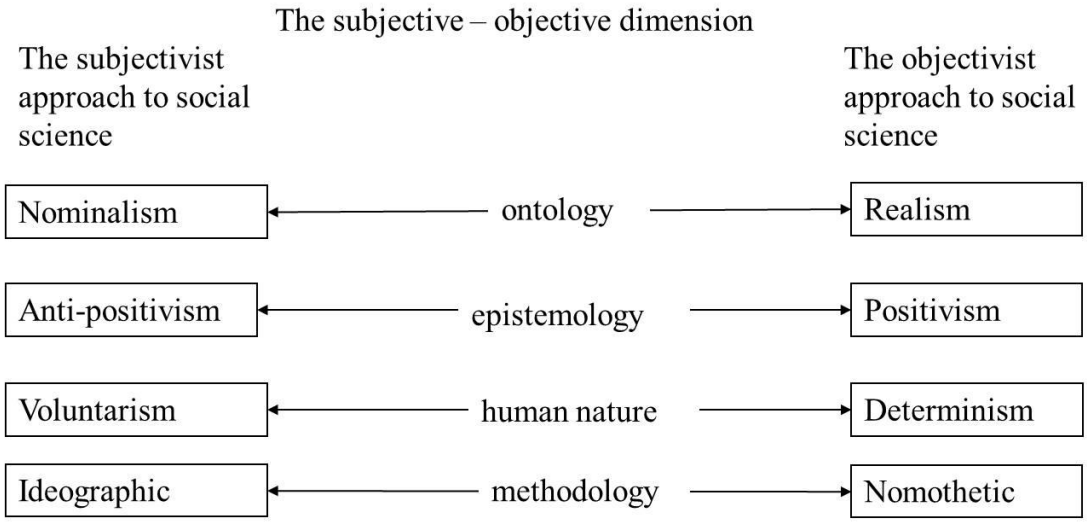

Figure 9. Burrell and Morgan's scheme for analysing assumptions about the nature of social science (Burrell and Morgan, 1979, p. 3).

Secondly, the epistemological stance of this dissertation is more anti-positivism than positivism. Epistemology concerns the assumptions regarding knowledge, the world and the relationships between the two (von Krogh, 1995). The epistemological position of anti-positivism is due to the chosen autopoietic epistemology, which does not deem the world as pre-given (Koskinen, 2010). According to Koskinen (2010), autopoietic epistemology regards cognition as a creative function, where knowledge results in self-production processes, i.e. autopoiesis. In the autopoietic view, knowledge is created, emergent, history-dependent, self-referential and context-sensitive. Knowledge is embodied both in individuals and in the internal structures and distinctions of the organization and it has to be communicated through structural and social couplings – not transferred as in cognitivist and connectionist epistemological views. (Koskinen, 2010). In this dissertation, this autopoietic epistemology is reflected in the way that individuals, organizations and networks are

viewed: people and organizations are in unique situations within their networks, making observations and creating knowledge within them while interacting and communicating in this new network entity. They have their individual and collective histories, which mould their views. However, the network organization leaders are viewed as capable of reflecting their comprehension of the network both from the viewpoints of their organization and network as an entity.

Thirdly, in this dissertation, humans are regarded as having the free will to master and control their environments, while understanding the effect of the organization environment. According to Burrell and Morgan (1979), this view of human nature is regarded as being voluntarism. Human nature is about the relationships between human beings and their environment with two extremes: voluntarism and determinism, where humans are regarded as controlled and marionette-like. Standpoints can also be somewhere in between determinism and voluntarism, allowing researchers to acknowledge the influence of the situation, while seeing humans with voluntary factors in their activities. (Burrell and Morgan, 1979).

Fourthly, when the basic assumptions of this dissertation, i.e. nominalism, anti-positivism and voluntarism, are positioned at the extreme ends of Burrell and Morgan's (1979) continuums, it results in the ideographical methodology approach of this dissertation. This is due to the fact that the methodology is impacted by the three factors mentioned above: ontology, epistemology, and human nature (Burrell and Morgan, 1979). The subjectivistic approach to social sciences and ideographical methodology, aiming at specifying rather than generalizing, is very well suited for a study of legitimacy building in whole networks, which situates in the sociological sector of theories used in management science and organizational theory (Koontz 1980).

Having contemplated the four sets of different approaches in social sciences by Burrell and Morgan (1979), the choice of pragmatism as a philosophical program makes researchers detached from ontological and epistemological assumptions, treating post-positivism and constructivism *"as social contexts for inquiry as a form of social action, rather than as abstract philosophical systems"*, (Morgan, 2014, p. 1049). Yet the older approach is not wrong and it is beneficial to acknowledge the choices made regarding ontological and epistemological assumptions. However, Morgan (2014) regards it more as a set of circumstantial beliefs and actions. Therefore, in this dissertation the choices of nominalism and anti-positivism are acknowledged, yet treated as circumstantial. In pragmatism, the essence is *"joining beliefs and actions in a process of inquiry that underlies any search for knowledge"* (Morgan, 2014, p. 1051).

To sum up, although the ontological, epistemological and human nature assumptions of this study have been contemplated, the new paradigm of pragmatism does not override those philosophical reflections, in the end, the research philosophy applied in this study is pragmatism. In the next section, the research strategy and methods are considered according to the philosophical program of pragmatism.

3.2 Research strategy and methodology

Whether this dissertation is viewed through the philosophical program of pragmatism or the four choices of nominalism, anti-positivism, voluntarism and ideographical methodology, the other choices of research design and methods follow these choices and are linked to each other, with the research approaches situated in their intersection (Figure 10).

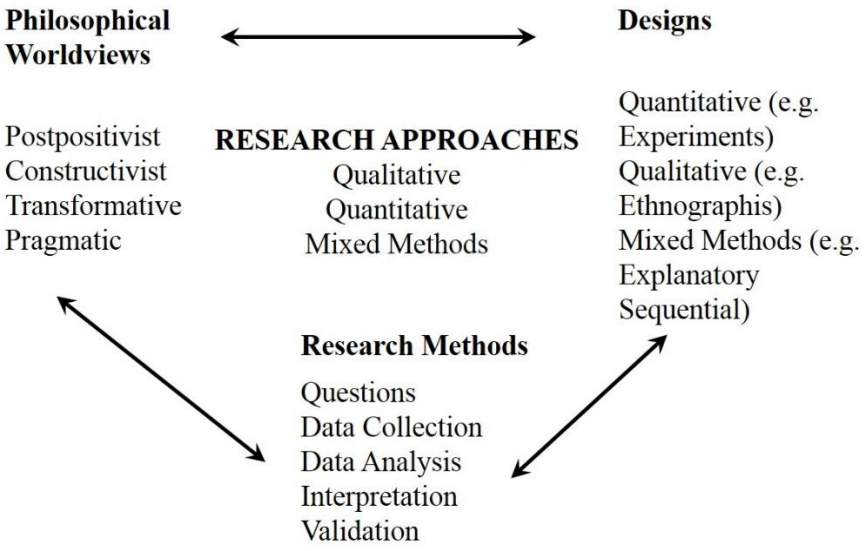

Figure 10. A framework for research: the interconnection of worldviews, designs and research methods (Creswell, 2013, p. 35)

In this dissertation the chosen research approach, which is the plan or proposal to conduct research (Creswell, 2013), is mainly qualitative. This qualitative approach is designed as an in-depth case study. More specifically, this dissertation is a single case study with systematic combining, which is a non-linear, non-positivist, abductive approach to case research (Dubois and Gadde, 2014). The choices made are justified in the following sections.

A single case study was chosen for multiple reasons: firstly, because there is a tradition of single case studies in organization and management studies (Dyer et al., 1991) and secondly because case studies are regarded as particularly applicable for early phases of new theory building (Gibbert et al., 2008). However, the case study approach is also controversial: its popularity has varied, although after two decades of neglect it has undergone a recent revival (Gibbert et al., 2008) and become prevalent in the new millennium (Gummesson, 2000). Another controversy that challenges the rigour of the case study is the close interaction with practitioners, which is typical for real management situations (Gibbert et al., 2008). The choice of this particular case is discussed later in more detail, but in fact the case network chose its researcher, therefore also other research approaches could have been considered. One potential approach could have been action research (Eden and Huxham, 1996; Huxham and Vangen, 2003; Järvinen, 2007), which inherently incorporates the researcher as a contributing actor, albeit with a dual role as a researcher. As action research is also based on pragmatism, it could also have been considered as the research approach. However, as the contribution of the researcher in the case network was data collection, analysis and reporting to the network organizations, i.e. conducting the predefined tasks or task defined by the project leader or the Board of Directors rather than project planning or decision making, the role was more of an observing and analysing case researcher than one contributing a vision. In addition, the scientific analysis of the case was carried out as a university researcher, once the network project had finished. Therefore, the case research approach seems a more solid approach, although the role of the researcher as an involved participant should be acknowledged in the assessment of the case study.

As in a case study, the focal issue of the study is understanding and solving the case, although it is imperative that the essence and learnings of the case study are linked to the research questions (Eriksson and Kovalainen, 2008). Thus, also in this dissertation the research questions, initially the preliminary questions and especially the final research questions, have been the backbone of the case study. In general, the aim of the case study is to research the case relative to its historical, economic, technological, social and cultural context (Eriksson and Kovalainen, 2008), which in this dissertation is the inter-organizational network context. Characteristically, case studies portray complex business matters accessibly, vividly, personally and realistically, yet that is also considered one of their drawbacks (Eriksson and Kovalainen, 2008).

In this dissertation regarding networks, case study is considered a research approach or strategy, rather than a method. This is acceptable according to Eriksson and Kovalainen (2008) due to the possibility of using both quantitative data together with qualitative data, with the goal of yielding diversity and complexity. Furthermore, case research as a research approach is particularly recommended in the network research context, due to the lack of methodological literature in the area (Halinen and Törnroos, 2005). Halinen and Törnroos (2005) consider, that this lack derives from the complex nature of networks with multiple actors, governance either by some type of formal or informal agreements, without being legal entities, with flexibility and change as inherent characteristics, thus making the temporal dimension part of the existence and research of networks. Also, the embeddedness of networks in various structures, such as market structures, causes each network to be unique and context-specific (Halinen and Törnroos, 2005). Therefore, it is imperative to define the boundaries of the case in question. In this dissertation, the boundaries were formed organically: the network in question was a definable group of organizations with determinable membership having a specific project period of collaboration.

The case study in this dissertation is an intensive single case study, due to the aim of qualitative interpretation and understanding of development and reasons in one idiosyncratic network, not to compare networks or to try to generalize the results. Another possibility would be to conduct the multiple case studies preferred by e.g. Yin (2003) and (Eisenhardt, 1989); however, single case studies, which are favoured by Dyer et al. (1991) for example, do have some particular advantages. According to Eriksson and Kovalainen (2008), a single intensive case study differs from an extensive one, a distinction made by Harré (1979) in Stoecker (1991), in that an intensive case study aims at looking into one or a few cases as deeply as possible, while an extensive case study maps common patterns and properties between cases. An intensive case study is based on the traditions of qualitative research, stressing interpretation and comprehension, with focus on the case itself, not in theoretical advance propositions, with the aim of learning from the case. Often intensive case studies examine time-related issues or development over time. Therefore, the ‘what happened and why’ type of research questions that illustrate the garnered understanding appear. The main aim of intensive case studies is not to produce generalizable knowledge, but to understand how the unique case worked. Thus, the appropriateness of the case study approach is justified by the uniqueness of the case. (Eriksson and Kovalainen, 2008).

In this dissertation, the case study is conducted with a particular approach of systematic combining, which is a non-linear, non-positivist, an abductive approach to case research (Dubois and Gadde,

2014). The abductive approach is particularly suited for the case study of this dissertation, which is a development process with an unpredictable outcome at the beginning. Therefore, the other types of reasoning are not so appropriate for such unpredictable development cases. *"In Aristotelian logic, inductive reasoning is generalization from specific instances, while deductive reasoning involves inference from logical premises"* (Dunne and Martin, 2006, p. 518). Additionally, Peirce perceived abduction as a form of "logical" inference according to Hoffmann (2000). Peirce (1903) states that *"abduction is the process of forming an explanatory hypothesis. It is the only logical operation which introduces any new idea"* (Hoffmann, 2000, p. 275).

The aim of this dissertation is an intensive, in-depth case study, portraying an idiosyncratic network. However, there have been debates between single and multiple case advocates regarding e.g. richness, uniqueness vs. replication and the analytical power of one or many cases (Dubois and Gadde, 2014). Yet, particularly the richness and rich context surroundings of a single study (Dyer and Wilkins, 1991; Langley, 1999) have been considered beneficial (Weick, 2007), such as being "a very powerful example" (Siggelkow, 2007), therefore the study of the case should be carried out more deeply, particularly if the issue is complex (Dubois and Gadde, 2002). Dyer et al. (1991) prefer better stories over constructs, yet Eisenhardt (1991) responded that better stories are needed along with better constructs. In multiple case studies, replications are the crucial issue (e.g. Eisenhardt, 1989; Yin, 2003), although they are not without dispute, since in social sciences where the uniqueness of observations is considered essential, replication can also be considered unfitting (Tsang and Kwan, 1999). Furthermore, the analytical power is argued: multi-case advocates allege that the power lies in multiplying, while single case adherents consider the multiplicity of the analysis power claim questionable since single cases can be deep-probing studies.

To conduct the case study in this dissertation with systematic combining (Dubois and Gadde, 2014) was chosen, firstly, due to the case being a network development case, where the outcome was unpredictable at the outset, thus the chosen approach had to allow room for various decisions regarding the research also later during the process, for example whether the interest would be in the success or dissolution of the network, depending on the outcome. Secondly, the case network is a complex phenomenon, which can be approached from multiple viewpoints, thus the chosen approach should allow the focus and re-focus on the phenomenon that would emerge during the process, for instance, legitimacy and its building during network development. Thirdly, the aim was to carry out the case study in close connection with the existing theory, not to use more data driven

methods, such as Grounded theory (Glaser and Strauss, 1967). Therefore, systematic combining was chosen, as it is an approach for *"handling the interrelated elements in the research work" that occur because "the intertwined activities in the research process" require the researcher to "constantly go back and forth from one type of research activity to another and between empirical observations and theory". Systematic combining is thus "a nonlinear, path-dependent process of combining efforts with the ultimate objective of matching theory and reality" (Dubois and Gadde, 2002, p. 556). This approach thus stands in contrast to the linear process advocated by the positivist school."* (Dubois and Gadde, 2014, p. 1279) The essential feature of the research process in systematic combining is called "matching" (Figure 11), which is *"about going back and forth between framework, data sources and analysis"* (Dubois and Gadde, 2002, p. 556). The role of the theory has three perspectives: 1) a tight and pre-structured framework, 2) a loose and emerging framework, and 3) a tight and emerging framework, the third being the one that systematic combining relies on. The *"concepts should be used in a sensible way to create a reference and to function as a guideline when entering the empirical world"* (Dubois and Gadde, 2002, p. 558). The framing of the research issues then evolves during the study and *"the original framework is successively modified, partly as a result of unanticipated empirical findings, but also of theoretical insights gained during the process"* (Dubois and Gadde, 2014, p. 1279: 2002, p. 559). According to Dubois and Gadde (2014), this view is supported by various researchers (Miles, 1979; Ragin, 1992; Sandberg and Tsoukas, 2011; Suddaby, 2006) and also during the research, the process demands the discarding of a priori views and revising the hypothesis (Flyvbjerg, 2006). Using systematic combining is particularly beneficial with the complex and unpredictable network development case of this dissertation, because it allows the researcher to proceed in a non-linear manner, studying the data in a few rounds and thus enhance the understanding of the entity during the research process.

In this dissertation, the case selection was approached in the manner of systematic combining, i.e. from the opposite direction compared to the linear approach: instead of the researcher selecting the case, the case selects the researcher. In network research, this type of case selection, which is determined by access to a certain type of network, does occur, for example in the study of Gebert-Persson et al. (2011) regarding two regional strategic networks. Also, boundary setting in systematic combining is a very important activity, since in the empirical world there are no natural boundaries. However, boundaries determine what is found. (Dubois and Gadde, 2014, 2002)

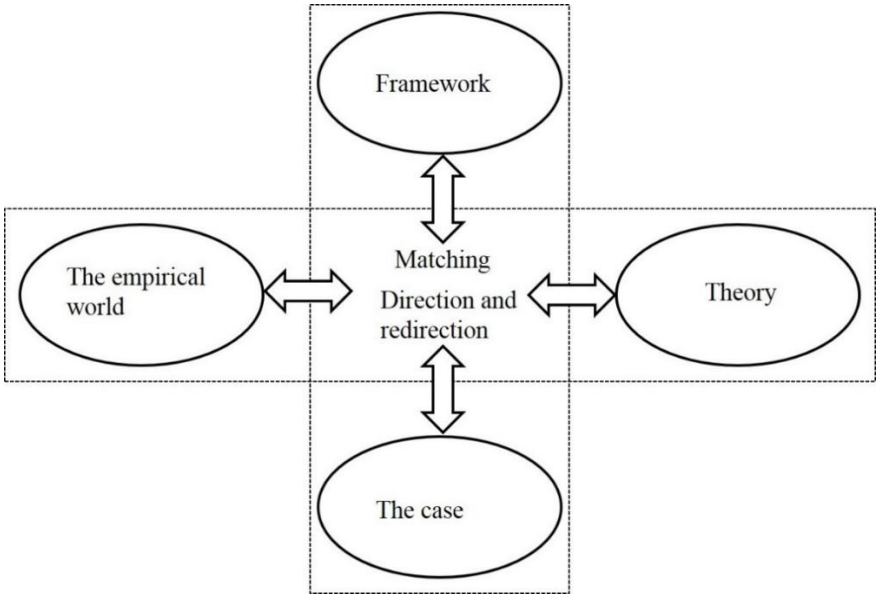

Figure 11. Systematic combining (Dubois and Gadde, 2002, p. 555)

Although a substantial and important research gap was identified during the research process of this dissertation, the research was not based on gap-spotting, i.e. the identification or creation of gaps in the existing literature by the researcher (Alvesson and Sandberg, 2011). In systematic combining, the non-pre-set boundaries give more room for redirecting the focus of a study, while *"moving back and forth between the empirical world and the theoretical constructs"* (Dubois and Gadde, 2014, p. 1280). Regarding theory building, Dubois and Gadde (2014) claim that numerous researchers have called for discovery-based theory building (e.g. Alvesson and Sandberg, 2011; van Maanen et al., 2007; Weick, 1989) instead of confirmation and verification. For research aiming at discovery, the research approach of abduction is considered more useful (Dubois and Gadde, 2002; Suddaby, 2006).

In order to make the case study of this dissertation valid research, certain case research objectives had to be considered. Therefore, in this dissertation, the views of Woodside (2010) were applied for achieving the principal objectives of case research: generality, accuracy and complexity/coverage, which can be achieved by using various methods. For achieving generality, Woodside (2010) emphasizes collecting multiple instances of process data, which was carried out in this dissertation by collecting interview data in three different rounds, as well as observing board meetings and workshops, additionally collecting data about participation, and reviewing secondary data regarding the industry. For achieving accuracy, Woodside (2010) stresses re-interviewing the same informant during and after observing the process or by holding multiple individual interviews with different

informants during and after observing the process, and applying method triangulation. In fact, in this dissertation, the re-interviewing of the same informants, as well as multiple individual interviews with different informants and method triangulation were all performed for accuracy. For complexity, Woodside (2010) draws attention to adopting systems thinking, which in this dissertation is applied by viewing the network as a complex system of a multiple, yet bounded group of organizations, whose collective opinion can be generated by conjoining their opinions. In case studies in general, the role of accuracy achievement is highlighted as paramount (Woodside 2010) and the role of generality role is understated (Flyvbjerg, 2006; Ruddin, 2006; Woodside, 2010). Non-linear, non-positivist case studies tend to favour complexity, originality and specificity, therefore their evaluation should also be done accordingly (van Maanen et al., 2007).

For this dissertation to be considered a good case study, it should be evaluated as such. However, currently, there is still no consensus on the ways to conduct a good case study, how to analyse and present qualitative data, and how to convince the audience, i.e. reviewers, editors and readers (Dubois and Gadde, 2014). However, instead of using the positivistic data evaluation, namely validity, generalizability and reliability, qualitative data should be evaluated on different terms. For example, Lincoln and Guba (1985) have introduced trustworthiness with four criteria: credibility, transferability, dependability and confirmability, but these criteria are also closely related to positivistic research ideals (Dubois and Gadde, 2014). Therefore, in this dissertation, the case study has arisen according to the views of Dubois and Gadde (2014) concerning a good case study. They suggest two highly significant aspects: 1) *"the presentation of the case study and its relation to theoretical concepts"*, and 2) *"a description of the methodological procedure underlying the case study"* (Dubois and Gadde, 2014, p. 1282), to ensure the ways to conduct, analyse, present and convince with a good case study. Therefore, matching, which regards the theory as the common thread, together with a concise, selective approach to case writing, which requires highlighting the important parts of the case for the reader, are essential (Dubois and Gadde, 2014; Siggelkow, 2007). As a result, matching, with the two key points of theory and case writing, has been the way chosen to conduct this case study. Moreover, as to theory and selective case writing, the case also has to be methodologically rigorous, which in this dissertation has been achieved in the manner of Dubois and Gadde (2014). They claim that methodological rigour can be achieved by explaining the research design, the process and the methods for data analysis (Dubois and Gadde, 2014). Along with transparency, Piekkari et al. (2010) emphasize reflexivity to balance the flexibility of case research, along with paradigm consistence, i.e. acknowledging whose views on a good case study

the researchers are following and sticking to them. Thus, the design, process and methods for data analysis have been explained transparently in detail.

To sum up the choices of research strategy and methodology of this dissertation research, case study has been chosen as the research strategy following the worldview choices of this study presented above. The ontological view of nominalism, aiming to present subjective interpretation and explanation of the situation at hand, the autopoietic epistemology of anti-positivism, and the view of human nature of voluntarism result in a subjectivist approach to organization studies and thus lean more towards the ideographical methodology approach. All of these can be amalgamated under the pragmatic research philosophy, thus following specifically a single, intensive case study, whose essence is the case that is studied with the non-linear, non-positivist abductive research approach of systematic combining. Therefore, the aim of this study has not been to replicate any prior study, but to learn from them and see through their theoretical "lens". Then the phenomenon is looked at in a novel, unique case circumstance from a new angle. Therefore, in this study, the Dubois and Gadde (2014) view of a good case study has been adopted: keeping the theory as the thread with a tight and emerging framework of systematic combining, taking the freedom of the case study, yet balancing it with the transparent explanation of the emerging research design, before and during the process, and methods of analysis. Additionally, as the accuracy of the case study is considered fundamental, the study applies the means to achieve accuracy by carrying out multiple individual interviews of different informants and re-interviewing the same informant several times, observing the process and applying method triangulation.

3.3 Research design

In the prior section, the assumptions of the philosophy of this dissertation have been explained. Therefore, in this section, the research design in practice, based on those choices, is described in detail. These assumptions of the researcher acted as the base and guided the selection of the case study research strategy. Moreover, contrary to many case study selections, the researcher did not select the case, but the case selected the researcher: the author was given the chance to act as project manager in a three-year networking project that was being launched with over 20 organizations. Although the title was project manager in the Network Administrative Organization (NAO), the tasks in this networking project were research project tasks and responsibilities according to the pre-determined project plan. Therefore the tasks included data collection by means of interviews and

surveys, arranging network events such as workshops and board meetings, taking notes in the events, analysing the collected data and reporting the results to the network organizations. In addition to this networking project, later on the author also worked on another publicly funded, yet education planning focused project in collaboration with the university. However, as a whole, the networking project was a rare opportunity for an organization researcher to observe and study the concept of inter-organizational networks and networking in a real-life context for a substantially long period. Therefore, the case is idiosyncratic, one of a kind, thus fascinating to any researcher interested in subjects such as inter-organizational collaboration, networking etc. From this research design viewpoint, in practice this meant that the author had a dual role: first as an actor in the NAO, albeit involved in research tasks, then after the project as a university researcher studying the collected data from a scientific perspective. However, as a researcher, being involved with the organizations under qualitative research is also a double-edged sword: as you gain access to the organizations and their collaboration, simultaneously you are exposed to researcher bias. However, without access and collaboration, the understanding of complex network collaborations could not be accumulated. As at the beginning, the end result of the project regarding the success or dissolution of the network for instance was unknown, as was the framing of the research issues along with the boundaries that would evolve during the study. However, the choice of the research methodology should be made as per its appropriateness in relation to the research aims, and choices justified according to what knowledge is looked for based on the research (Eriksson and Kovalainen, 2008). The case study allows the use of various research methods. As this study deals with inter-organizational networking that later focused on the network's legitimacy building, whose inherent attribute is complexity, the phenomenon had to be studied from multiple angles. Therefore, case study research strategy appeared to be the most appropriate.

The theory, or more specifically the lack of theory on whole networks, guided the determination of the unit of analysis. The potential results of a network as the unit of analysis are compelling to those interested in inter-organizational networks and networking. In this case, there was a bounded group of organizations, a network, within the networking project. Membership was defined by either participation in the networking project with a participation fee and with most organizations also a contract with the public funding body. Therefore, the boundaries of the research object were also somewhat self-aligned. As previously stated, this study employs a single intensive case study design (Dyer and Wilkins, 1991; Eriksson and Kovalainen, 2008) with a bounded network of organizations within a three-year networking project (2010–2013) as the unit of analysis. The number of network

actors, i.e. organizations, changed during the process, although in each phase the number of participants could be defined. The executives assigned by the network actors to the project as participants were used as informants. Mostly they were the CEOs, managing directors, senior vice presidents or vice presidents, directors, sales and project managers of the network organizations. These people participated in the networking events and most of them were part of the networking project's Board of Directors. Therefore, the informants were considered as representative members of the studied network organizations, thus also of the network (cf. Kumar et al., 1993). Therefore, studying the organizations and more specifically the executives involved, who were actual participants, the network level results, e.g. regarding network structure, can be yielded by collecting the research material from individual informants. Thus, from this accumulated research material, together with other supporting research material, such as documents, it is possible to identify the results of internal legitimacy and particularly strategy development during legitimacy building at network level.

3.4 Data, methods and analysis

In this section the research material gathered, and the collection and analysis methods according to the research design of this dissertation are described. Conducting a single intensive case study by systematic combining means that this unit of analysis is studied from multiple angles. Regarding the research process, it signifies the framing of the research issues along with the boundaries that evolved during the study, which are portrayed in Figure 12. The theory, or sometimes the lack of it, functioned as a guideline, in particular for the interviews and surveys. In accordance with abductive systematic combining, the process was carried out in four rounds. The first three rounds were guided by the preliminary research questions. The theoretical framework narrowed down each round, focusing early on a general understanding of network theory towards network legitimacy and particularly to its building. In Figure 13, the research process is described in detail. Particularly, the final research themes of network legitimacy building are reflected in the first rounds of the abductive research process and the research data. As the frame of the research evolved during the systematic combining process, so did the research questions.

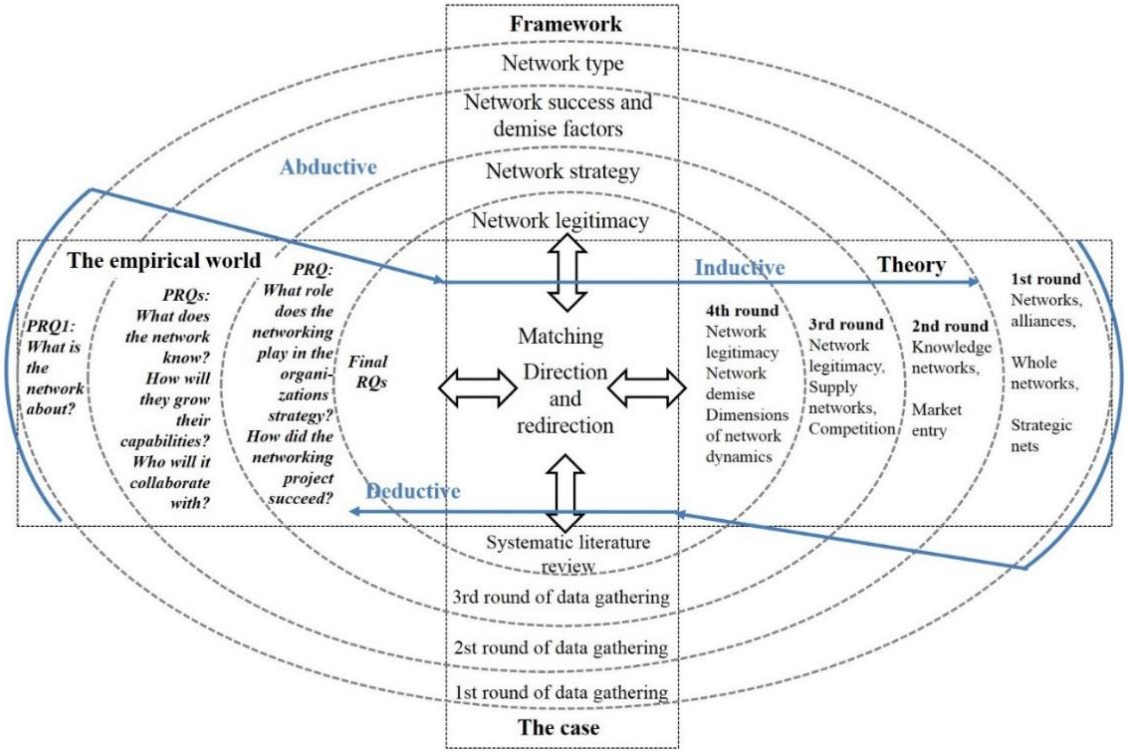

Figure 12. Abductive process of the research by systematic combining

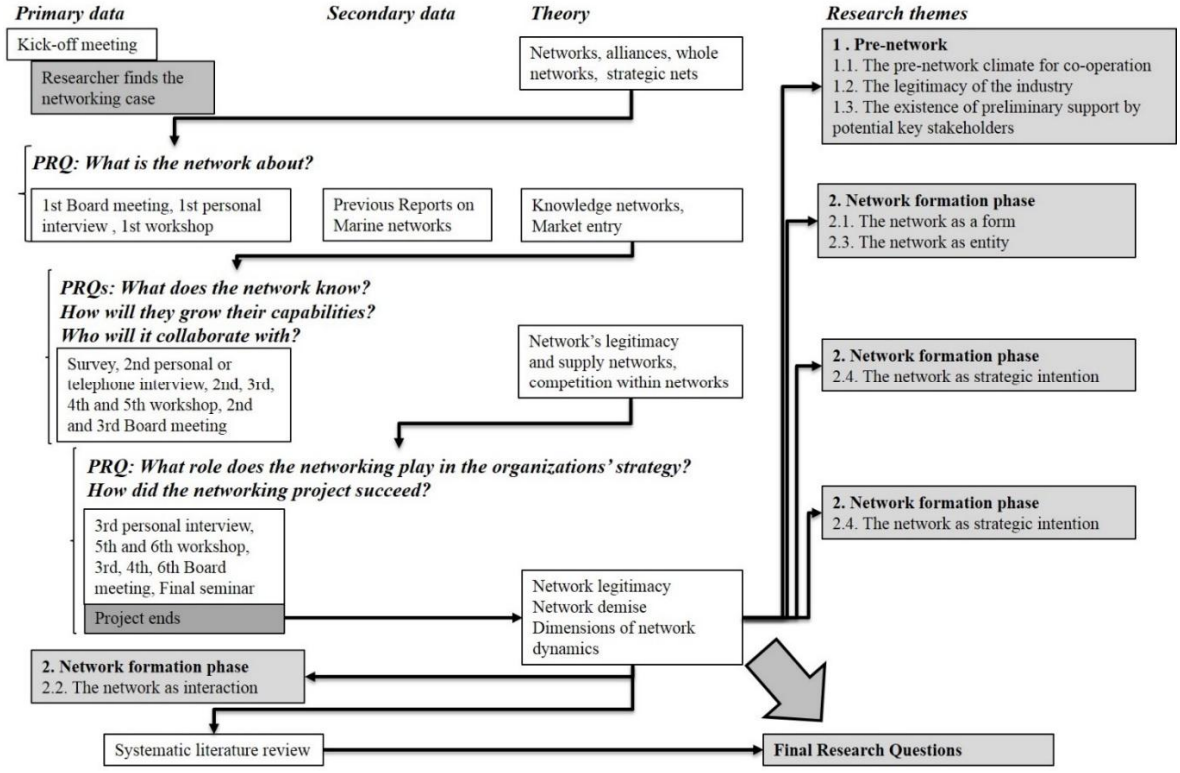

Figure 13. Research process with preliminary research questions and relation to the theory

First, the research questions were preliminary, as naturally the end result of the networking project was unknown. When the end results were at hand after the three-year project, the concept of network legitimacy was selected as the viewpoint of the case study research. To ensure that no significant novel literature regarding the subject was ignored, a systematic literature review was conducted.

The process and results of the systematic literature review as part of the theoretical framework building are presented in Chapter 2. The systematic literature review did introduce the concept of interpartner legitimacy with three different types, and it was included in the theoretical framework along with the three pre-network dimensions and four formation phase dimensions of legitimacy building.

3.4.1 Interview data and its analysis with Atlas.ti

In this dissertation, the major empirical data collection methods were interviews with the network organizations and observations of the network workshops and board meetings. Qualitative (informal) interviews and observations have been suggested for studying processes in organizations (Gummesson, 2000). The benefits of interviews are their loose structure and openness to the interviewee's views on what is relevant and important, as well as giving opportunities to bring out the *"interviewee's experiences, knowledge, ideas and impressions"* (Alvesson, 1996, p. 465). The researcher's pre-understanding is not much of a constraint and mutual understanding can be negotiated in the social situation of the interview. However, the social situation also induces criticism as a qualitative method in leadership research, as the interview is seen as the *"scene for a conversation rather than a simple tool for collection of 'data'"* (Alvesson, 1996, p. 465). Additionally, a positive bias is present, as the interviewee wants to give a good impression. However, a positive bias is also a characteristic of questionnaires (Alvesson, 1996). Gummesson states that surveys include *"questionnaires and interviews and statistical, quantitative processing of data"* (Gummesson, 2000, p. 35).

Interviews were chosen as the main method used in this study, as they provide the most appropriate way to explore organizations regarding their views and visions of networking. To ensure the accuracy of the case study, multiple individual interviews of different informants were carried out, along with re-interviewing of the same informant several times, observing the process, and applying method triangulation by also using a web-based survey. The selection of informants was organic, as the majority of the participants in the networking project were the top executives of their

organizations (2 presidents, 7 CEOs, 5 managing directors, 3 executive vice presidents, 4 senior vice presidents, 6 vice presidents, 6 directors, 1 deputy managing director, 1 senior sales managers, 7 sales managers, 2 marketing managers, 3 project manager, 2 area and 2 business managers, along with 12 other executives). Therefore, they were the people with the most information regarding their organizations' strategies, visions and networking. The timeline for collection and analysis of data is presented in Figure 14.

The interviews of this dissertation were mainly recorded by the author herself taking verbatim notes concurrently during the interviews. Therefore, there was mainly one interviewer asking the questions and one note taker, i.e. the author, who has prior experience as a professional secretary, present in the interviews. The telephone interviews by the author were audio recorded and transcribed afterwards. Recording and verbatim transcription of interviews is currently common, yet there are also opinions both on behalf and against it. Although audiotapes provide an accurate record of the conversation, the use of written field notes either during an interview or immediately afterward has been reported according to Fasick (1977) as being superior to the exclusive use of audio recordings. However, according to Halcomb and Davidson (2006) the theoretical frameworks of Phenomenology, Grounded theory, Feminism and Ethnography benefit from a verbatim record of the interview to ensure the critical closeness between researchers and the text. Yet, in more generic mixed-method research, such closeness is not as critical for the analysis of the data (Halcomb and Davidson, 2006). Therefore, as the aim of the interviews was to collect opinions and facts about the network organizations, detailed notes written by the author with professional experience in note taking, were considered a suitable method for recording the interviews. Naturally, one or two words may have been lost during the process, but as the aim was not to make a phenomenological analysis of the words or phrases used, no significant information was lost during the note-taking process.

A total of 61 interviews were conducted for the study. All the interviews were semi-structured, 37 of them individual and 24 with 2-4 informants at the same time. Altogether, there were 57 interviewees in three rounds of interviews. Two rounds, the first and the third, were conducted face-to-face. The second interview round after the web-based survey was mostly carried out as a recorded telephone interview, although five of them were carried out face-to-face due to the close proximity of the interviewee. The author was present in 49 of the 61 interviews, as the first 12 of the first-round interviews were conducted by the project leader. In 42 interviews, in addition to the author there was another interviewer i.e. project leader present, who mainly asked the questions and carried

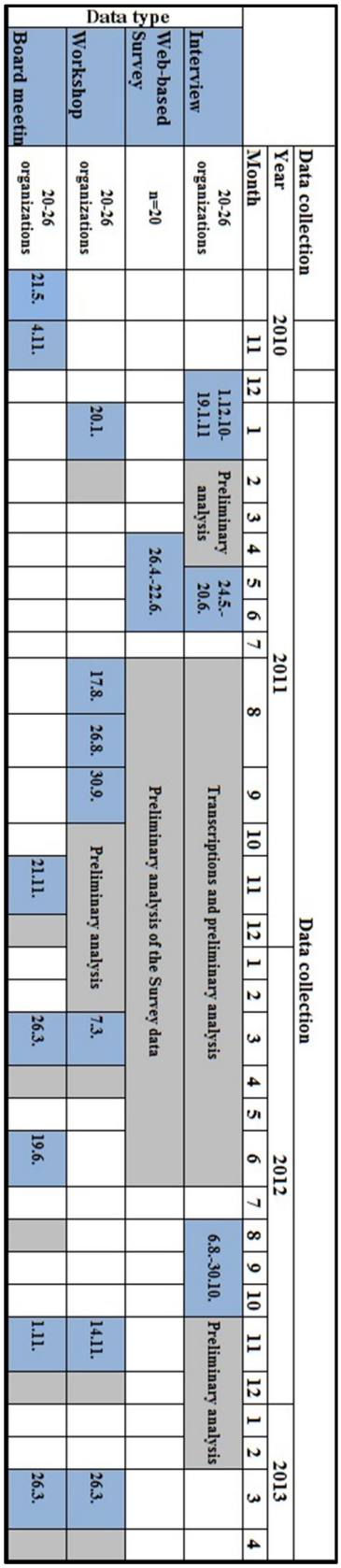

Figure 14. Timeline for data collection

out the conversation according to prepared questionnaires. The author prepared the questionnaires for the second and third interview rounds. The interview themes and survey questions are presented in Appendix 1. The data collected from the interviews was mainly concurrently typed, verbatim notes taken during the interviews. The telephone interviews were recorded and transcribed by the author. The details of the three interview rounds together with other research events are presented in Table 8. Observations of six workshops, six board meetings (2nd–7th) and one final seminar were also carried out by the author. Notes and meeting minutes prepared mainly by the author were also part of the qualitative data of this research. A detailed table of all participants and informants of all the networking events is presented in Appendix 5.

Table 8. Research events for data collection

Research events	*Participation percentage*	*Participating network executives*	*Participating network organization*	*Total no. of organisations*	*Other participants* * = + 1 researcher
1st face-to-face interviews	95,2%	47	20	21+1	*
2nd telephone/face-to-face interviews	90,5%	22	19	21+1	*
3rd interviews	91,7%	32	22	24+1	*
On-line survey	95,2%	20	20	21+1	*
1st Workshop	68,2%	17	15	22	1*
2nd Workshop	52,2%	14	11	23	2*
3rd Workshop	54,5%	16	12	22	1*
4th Workshop	50,0%	13	11	22	*
5th Workshop	36,4%	9	8	22	2*
6th Workshop	40,0%	11	9	25	1*
Preliminary meeting	60,0%	14	12	20	6
1st Board meeting	65,0%	15	13	20	3
2nd Board meeting	45,5%	13	10	22	1*
3rd Board meeting	45,5%	12	10	22	1*
4th Board meeting	31,8%	9	7	22	2*
5th Board meeting	52,2%	12	12	23	*
6th Board meeting	40,0%	13	10	25	1*
7th Board meeting	44,0%	12	11	25	2*
Final seminar	56,0%	15	14	25	4*+

The qualitative analysis of the interviews was carried out by the author by coding the notes and transcriptions using the analysis software, ATLAS.ti. The coding of the interviews was carried out in two phases using a priori codes. First, the notes and transcriptions were coded by using pre-determined, structural codes (Saldana, 2012) from the pre-defined questions. The codes that had answers to the research questions of this study were picked out. In the second phase, codes were grouped into code families with a priori codes regarding the legitimacy building of the network by using hypothesis coding (Saldana, 2012).

As the empirical research data was collected in three phases according to the three strategy phases of the project, the codes are also grouped and visualized correspondingly in three groups: background information of the network (NW), NW capability building strategy, and networking strategy (Figure 15).

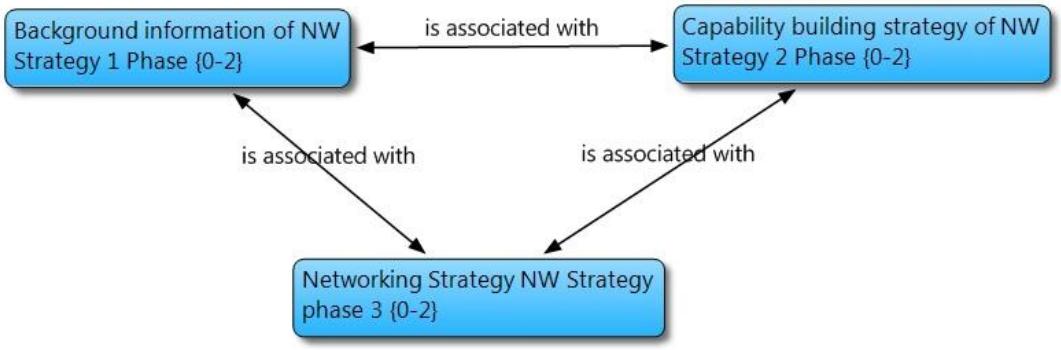

Figure 15. The three strategy phases as tools for visualizing the codes in ATLAS.ti

In ATLAS.ti, which is a software program for qualitative research purposes, the coding of the research material can be visualized for instance in a network view. The visualizations with the network views in ATLAS.ti in this dissertation are all prepared by the author. An overview of the ATLAS.ti network view of the 84 codes used in the interviews of this research is presented in Appendix 3. The more detailed network views are presented later in this section. In the ATLAS.ti network views, the various boxes represent interview codes and code families. In the network views of the interviews (Figure 16, Figure 17, Figure 18) the depth of the green of the boxes represent the density of the particular code, that is, the lighter green in the network graph, the denser the code. Density signifies the number of answers a particular code has. The densest codes of the code network have 22 responses. On the other hand, the darker green the code appears, the less dense the code is. The least dense codes have three responses. The grey boxes represent code families created

in the second round of coding. In this research, a code family included codes ranging from one code (e.g. ”capability building strategy vision” code family: “expectations of NW training strategy” in Strategy 2 phase) to eight codes (e.g. “background and needs” code family in Strategy 2 phase).

The codes of the first strategy phase, i.e. “the background information of NW”, have a total of 18 codes (Figure 16), grouped into five code groups of “general”, “NW product of Finnish offshore industry”, “networking amongst NWP”, “networking within the target market industry” and “subcontracting from Finnish SMEs”. Each of the code groups contains two to four codes.

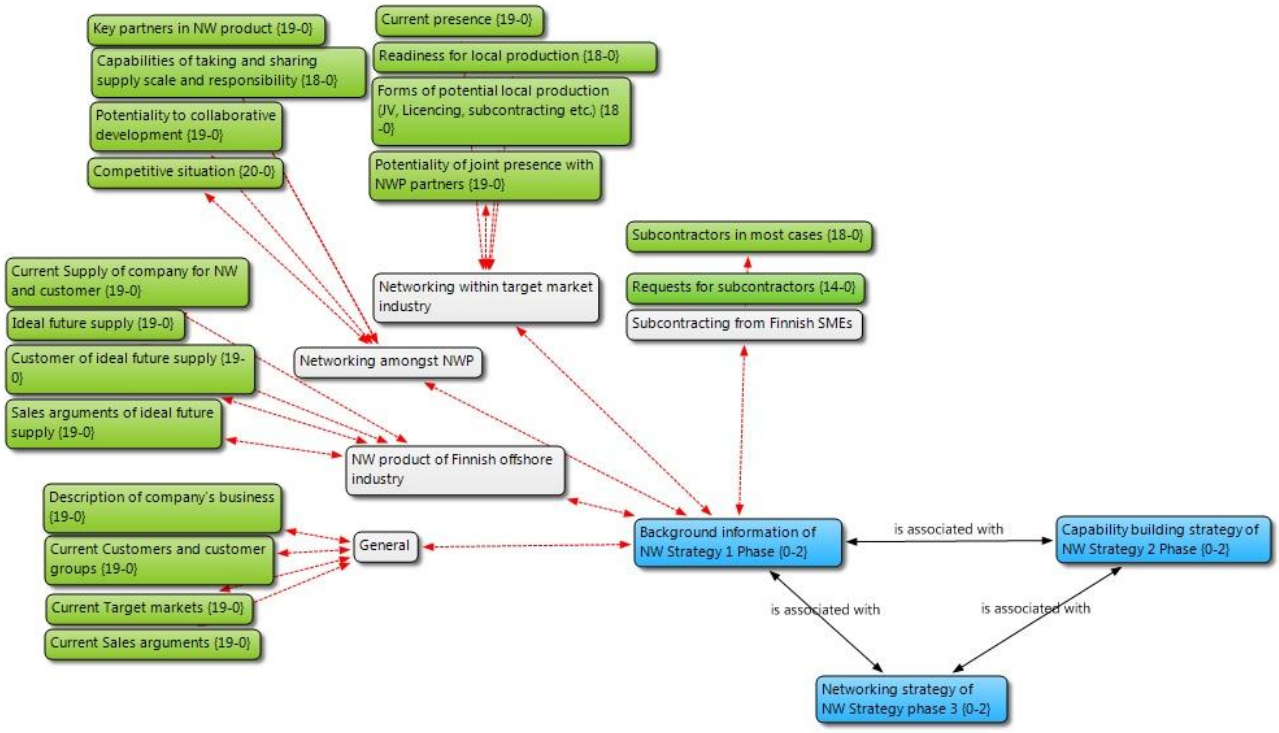

Figure 16. Codes and code families of the first interview round in ATLAS.ti

The Network Strategy 2 phase, i.e. the “capability building strategy of the NW” has a total of 26 codes (Figure 17). The codes of this phase were grouped into five code groups of “capability building strategy vision”, “background and needs”, “training partners”, “type of capability building”, and “NWP interaction and comments”. Each of the code groups includes from one to eight codes.

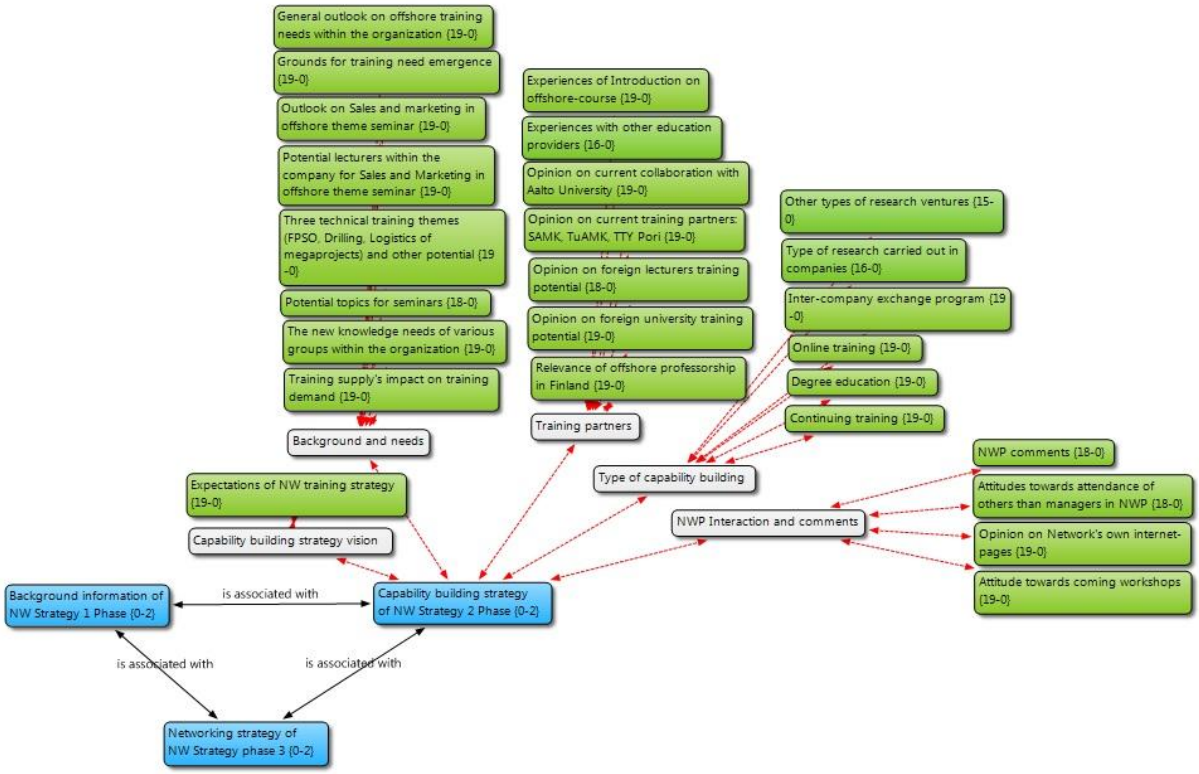

Figure 17. Codes and code families of the second interview round in ATLAS.ti

The Network Strategy 3 phase, i.e. "the networking strategy" has a total of 40 codes (Figure 18), grouped into four code groups of "network project", "network strategy", "network structure" and "network future vision". Each of the code groups includes from four to 16 codes. However, as there are such a large number of codes, the four code groups of this Network Strategy 3 phase are further sub-grouped. The sub-groupings are visually clustered in the network view.

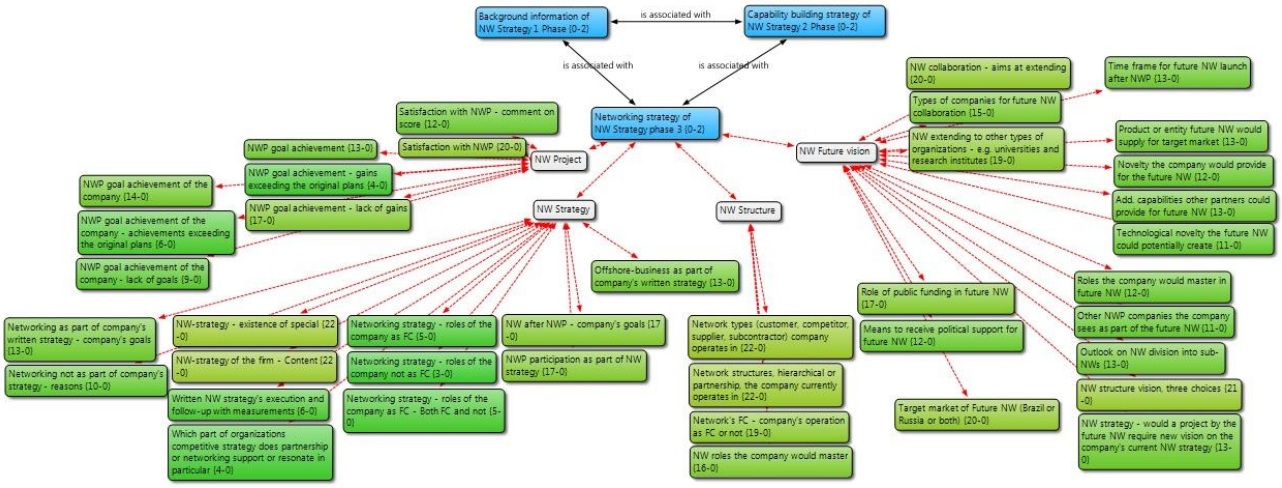

Figure 18. Codes and code families of the third interview round in ATLAS.ti

The entire listing of the categories and 84 codes that recurred in the analysis of all three network strategy interview rounds is presented in Appendix 2.

3.4.2 Observation data, documents and secondary data

The observation data was collected from six workshops and six out of eight board meetings by the researcher taking field notes. These notes were also produced as the memoranda of the board meetings and four strategy reports including observations and results of the workshops. Both the memoranda and four strategy reports were distributed to the network organizations during the project. These documents were also analysed as part of the research data with ATLAS.ti. Most of the 57 interviewees participated in the workshops and board meetings. Additionally, 17 other informants participated in the workshops and three in board meetings. Two of the informants changed their organizations withinthe network organizations, thus they were accounted as informants only once. Furthermore, besides the author, there were three additional participants from NAO. Other stakeholders also participated, particularly in the workshops. Observation data turned into memoranda and strategy reports played a significant role, especially in the determination of the potential network governance types envisioned by the network organizations.

In addition to those documents produced according to the observations in the board meetings and workshops, other documents were also used as secondary research data, such as public funding grant instructions along with the project plan. Moreover, this secondary document data played a significant role in determining the strategy of the network project and the restrictions placed by public funding on how the project was conducted. Again, these secondary documents were analysed with ATLAS.ti. In addition, prior reports on the Finnish maritime industry were used as secondary data, providing background information on the industry, its networking and the relationship of the network companies to each other. These reports were not analysed in ATLAS.ti, but used as referenced data sources. Moreover, the secondary data of prior reports contributed to the determination of the pre-network climate and legitimacy of the industry.

Besides the interviews, the various documents used in the empirical analysis were coded in ATLAS.ti. A complete list of the codes 85 used for the documents is presented in Appendix 2. The network illustrations of the documents and codes produced in ATLAS.ti are presented thereafter. The documents are categorised into four groups and the colours used highlight the codes of the various document groups (Figure 19, Figure 20, Figure 21, Figure 22). The network illustration of Figure 19 represents the project, NAO and stakeholder press documents, which are shown with the

codes in yellow. The network illustration of Figure 20 represents the board meeting documents, which are shown with the codes in turquoise.

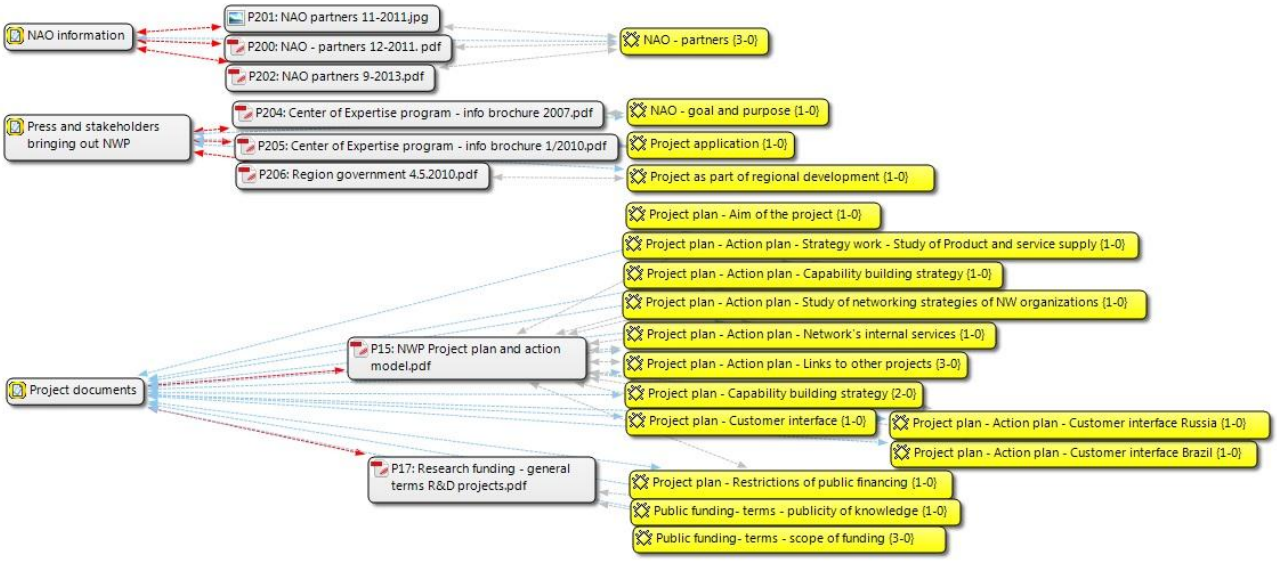

Figure 19. Network illustration of project, NAO and stakeholder press documents and their respective codes in ATLAS.ti

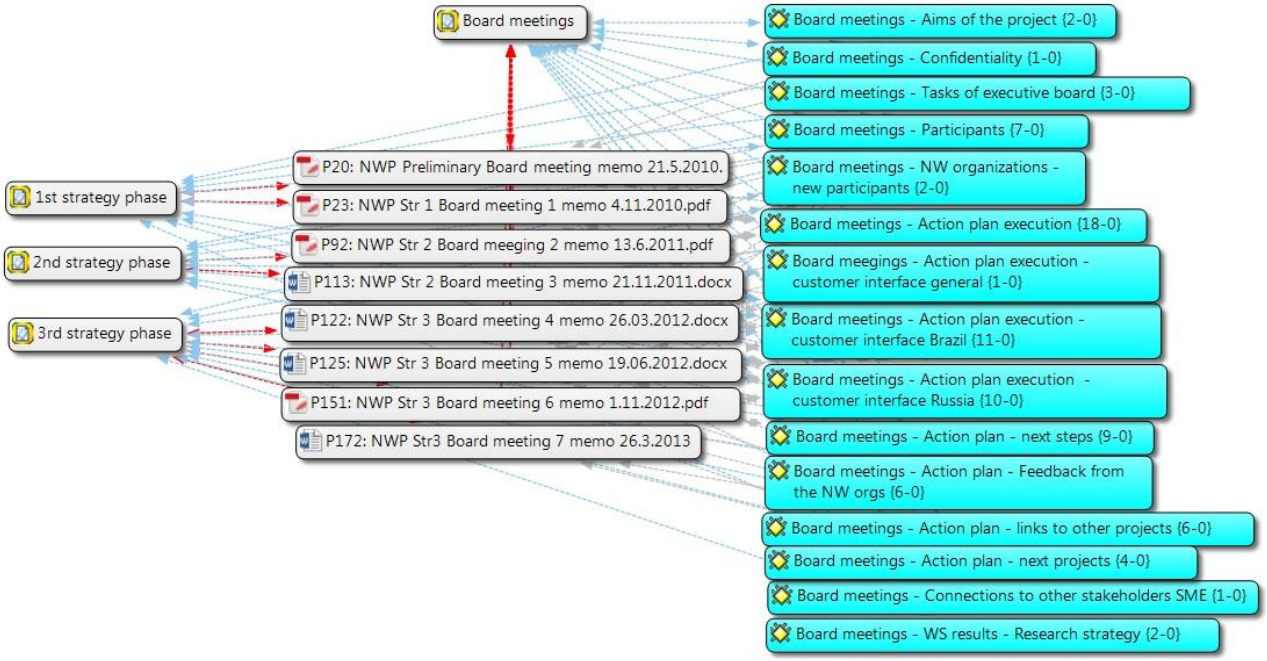

Figure 20. Network illustration of board meeting documents and their respective codes in ATLAS.ti

The network illustration of Figure 21 represents the workshop documents, which are shown with the codes in blue.

Figure 21. Network illustration of workshop documents and their respective codes in ATLAS.ti

The network illustration of Figure 22 represents the strategy report documents, which are shown with the codes in green.

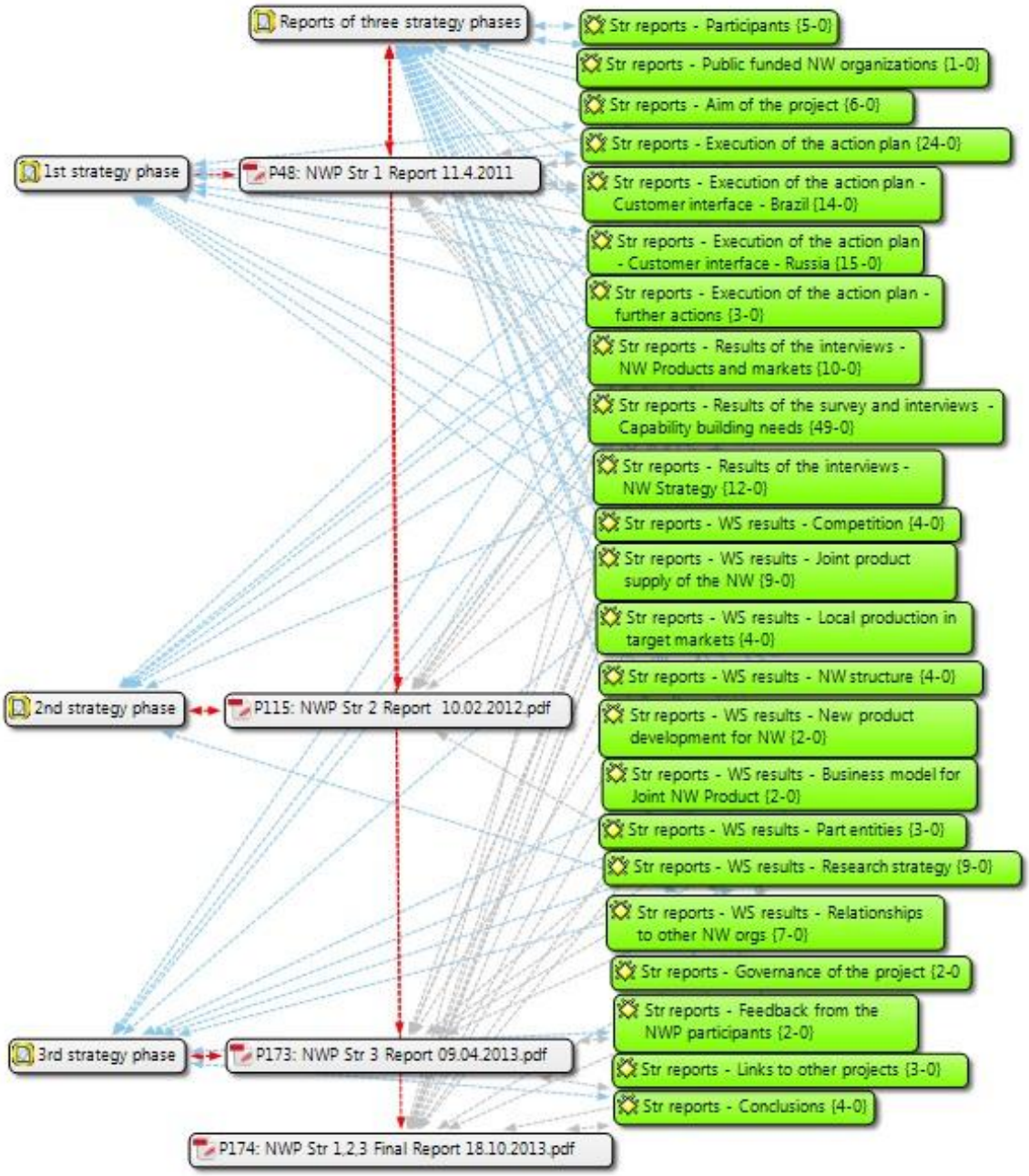

Figure 22. Network illustration of strategy report documents and their respective codes in ATLAS.ti

An overview of ATLAS.ti network view of the documents and their links to each other and to the codes of this research is presented in Appendix 4.

3.4.3 Survey data and its analysis

Quantitative data was collected in the second data collection phase with a web-based survey program from LimeSurvey, a free open source software survey tool ('LimeSurvey', 2016). The questionnaire of the survey of chosen informants consisted of the following (Appendix 1):

- 6 background information questions regarding the organizations and 5 regarding the respondent
- 12 multiple-choice questions and 4 open-ended questions regarding the professionals requiring training, the themes and type of the training regarding the themes and involvement in research
- 1 evaluation regarding the length of the questionnaire and the permission to use the results anonymously for research purposes

The author prepared the questionnaire, uploaded the questionnaire to LimeSurvey, sent the survey link to the respondents and supervised the responses by the network companies. After the companies had given their responses, the author imported the data from LimeSurvey to Excel. The analysis of the data was carried out on a spreadsheet. The role of the quantitative data was to support the qualitative data. Additional quantitative data was collected regarding the participation of the network organizations and their executives in the networking events. For example, the types of organizations that the network included were determined using the qualitative data of the survey. On the other hand, the interaction of the network was viewed via the participation of the network organizations in the network events.

3.4.4 Reporting the case study

Regarding the reporting of case studies, Yin (2014) presents multiple structures: linear-analytic, comparative, chronological, theory building, suspense and unsequenced. Although the reporting of dissertation work is supposed to follow the linear-analytic structure, which according to Yin (2014) is not the most suitable for case studies, the reporting of the results of the case study in the "Results" part of the linear-analytic structure may take the form of theory building, for example. In other words, the reporting of the case results uses the logic of theory building, which is suitable for intensive case studies that develop new theoretical constructs.

Regarding the output of the report, the presented tables and figures in particular are the result of analysis by the author and produced by herself, unless specifically referenced. However, Figure 26

is the result of the first workshop by the network organizations and has been re-drawn by the author. The scientific analysis of the models in Figure 26 was carried out by the author. Figure 24 is referenced Suominen and Breite (2015), as the figure was part of a non-published conference paper at the 22nd International Annual EurOMA Conference in Neuchâtel, Switzerland.

4 Empirical results

In this chapter, the empirical results are presented of the studied single case of legitimacy building in a network. The empirical results in the case network are described in three main topics: first, the two temporal phases of legitimacy building in the network, i.e. the pre-network and network formation phase (Human and Provan 2000), followed by the output of the network legitimacy building and identifies contingencies. Each of the topics is described in a section of this chapter along with the results of the research questions (see Table 9). Table 9 presents an overview of the empirical data used for analysis in each phase. In order to follow the analysis process from data to results, the more detailed information of the empirical data and codes used is illustrated in tables at the beginning of each phase and their sub-sections (see Tables 10, 11, 13 and 15).

Table 9. Research topics of network legitimacy-building phases and dimensions together with the empirical data used

Network legitimacy-building phase and its dimensions	***Empirical data used***
Pre-network phase	
The pre-network climate for co-operation	Secondary data, strategy 1 phase interview
The legitimacy of the industry	secondary data, public funding grant instructions, project plan
The existence of preliminary support by potential key stakeholders	Discussions with networking project leader, project plan
Network formation phase	
The network as a form	1st interview and 3rd interview, survey, public funding grant instructions, strategy reports, workshop observations reported in strategy reports, board meeting memos, project plan
The network as strategic intent	2nd and 3rd interview rounds, survey, project plan, board meeting memos, strategy reports, workshop group work observations in memos
The networks as interaction	Project plan, strategy reports, board meeting memos, records of participation in workshops
The network as an entity	Discussions with project leader, NAO documents, board meeting memos, memos and records of participation in workshop, public funding grant instructions, strategy reports, project plan
End results of the networking project	
End results of the networking efforts	3rd interview round, strategy reports, 7th board meeting memo, results of 6th workshop reported in strategy reports

First, as background information to the sequential network formation phase, the question was "*how are the legitimacy-building dimensions of the pre-network phase (the climate for co-operation, the legitimacy of the industry, and the existence of preliminary support by potential key stakeholders) manifested in the legitimacy building of a whole supply network during its formation?"* The aim was to gain knowledge about the circumstances regarding legitimacy building prior to the actual formation of the whole supply network. The three dimensions of the pre-network phase are in accordance with Human and Provan (2000): 1) the pre-network climate for co-operation, 2) the legitimacy of the industry, and 3) the existence of preliminary support by potential key stakeholders. This question is answered mainly with the help of qualitative project documents, such as the project plan, public funding grant information, secondary data and discussions with the project leader, who was responsible for the network project.

In the second part, the network formation phase is presented from the legitimacy-building point of view. The first, third and fourth dimensions of the network formation phase: the network as a form, the network as an interaction and the network as an entity, are in accordance with Human and Provan (2000) and van Raaij (2006). The second dimension of the network as a strategic intent is according to van Raaij (2006) and Valkokari (2015a). The focus is to understand *"how are the four legitimacy-building dimensions (the network as a form, the network as a strategic intent, the network as an interaction and the network as an entity) manifested in the legitimacy building of a whole supply network during its formation?"* In other words, the research focuses on how the four legitimacy-building dimensions are manifested in the case network. Additionally, with respect to the network as a form and the network as a strategic intent, the network type is considered with the supply network archetype typology by Pathak et al. (2014). The goal is to find out "*which supply network archetype or types are identified when the network legitimacy dimensions of the network as a form and the network as a strategic intent are viewed via the supply network typology of Pathak et al. (2014)?"* In other words, what features of the supply network archetypes are discovered from the case network when it is examined via the supply network archetype model? These two sub-questions are answered mainly with the help of qualitative interview data from the three interview rounds, observations from workshops and board meetings, a survey, together with participation records, documents, such as project plan, memoranda, reports and public funding grant instructions. Altogether, the three sub-questions presented above answer the first main research question, "*How do network actors build legitimacy during the formation of a whole supply network?*

In the third and last part, the end result of the network project according to the perceptions of the network organizations is illustrated. The second main research question, which goal is to comprehend "w*hich contingencies exist in legitimacy building during the formation of a whole supply network?"* is answered with the identified contingencies that were present during the whole formation phase, therefore integrated in the legitimacy-building process phases, as well as with the perceptions of the network organizations of the network project's accomplished and unattainable goals. This question is answered with the results of the entire research material, however regarding the perceptions of network organizations of the end results of the networking project, particularly with the results of the 3rd interview round are utilized.

4.1 Pre-network phase

In the pre-network phase, the organizational field and initial conditions are important. The results of the three critical issues for understanding the direction that legitimacy building might take are 1) the pre-network climate for co-operation, 2) the legitimacy of the industry, and 3) the existence of preliminary support by potential key stakeholders. The empirical data and codes used for the analysis of the status of legitimation in the pre-network phase are presented in Table 10. The results of the analysis are then elaborated in more detail in the following sub-sections.

As a brief introduction to the whole network under study, the network consists of 20–26 Finnish maritime organizations. Their ultimate goal was joint market entry into the offshore sector. This large group of organizations was intentionally gathered in a three-year networking project to envision a large joint delivery to the fairly challenging target countries of Russia and Brazil in the highly demanding industry of upstream oil exploration and production. As oil and gas have not been discovered on the Finnish continental shelf, there is no domestic market for oil and gas exploration and production industry per se. However, the Finnish maritime industry holds a long tradition of producing large marine constructions, such as cruise ships and oil production platform hulls.

Table 10. Empirical data and codes used for the analysis of legitimacy in the pre-network phase

Pre-network phase

1. **Pre-network climate for co-operation**, i.e. whether the cooperation in the pre-network organizational field had already been legitimized, studied by viewing the industry's level of experience in the networked modus operandi and the density and multiplexity of prior relationships within the network

   Analysis:
   - Status of the legitimacy of cooperation in the pre-network organizational field.
     - § Secondary data: Karvonen et al. 2008, 2016; Karvonen and Saurama 2006; Viitanen et al. 2003
   - The network density and the multiplexity of the relationships.
     - Evolution of the industry in Finland and the structure of the companies in the industry
       - § Secondary data: Viitanen et al. 2003
     - Background of the NAO
       - § Secondary data: NAO background information: *"NAO - goal and purpose"; "NAO – partners"*
     - Familiarity of the companies and their executives with each other
       - § Strategy 1 phase interview: "*Key partners in NW product"; "Subcontractors in most cases"*

2. **Legitimacy of the industry, i.e.** whether the state legislators and public funding agencies showed interest in the maritime industry.

   Analysis:
   - The interest expressed in the maritime industry in Finland by state legislators and public funding agencies.
     - § Secondary data: Ministry of Employment and the Economy (2016), Fimecc (2014), Yle (2014)
   - The interest expressed in the project by public funding agencies.
     - § Project plan: "*Project plan - Restrictions of public financing"*
     - § Public funding grant instructions: "*Public funding - terms - scope of funding"*

3. **Existence of preliminary support by potential key stakeholders**

   Analysis*:*
   - Identification and the involvement and impact of key stakeholders prior to the network formation, their impact on choice for NAO, project leader, formulation of project plan, and inside-out or outside-in network strategies.
     - § Discussions with project leader
     - § Project plan (Pp): *"Pp - Aim of the project"; "Pp- Study on network supply"; "Pp - Capability-building strategy"; "Pp - Customer interface"; "Pp - Restrictions of public financing*

4.1.1 Pre-network climate for co-operation

In the prior studies of the pre-network climate for co-operation (Human and Provan, 2000), the existence of the legitimacy of cooperation in the pre-network organization had been researched by studying the pre-network involvement of organizations, the network density and the multiplexity of the relationships. In this network case, it was studied whether the cooperation in the pre-network organizational field had already been legitimized. This was executed by viewing the industry's levelof experience in the networked modus operandi and the density and multiplexity of prior relationships within the network. The study of secondary data regarding the status of the legitimacy of cooperation in the pre-network organizational field highlighted the fact that the Finnish maritime industry, in general, is very used to networking. The maritime cluster and its networks have also been studied since the year 2000 and reported on every few years. (Karvonen et al., 2016, 2008; Karvonen and Saurama, 2006; Viitanen et al., 2003). According to Viitanen et al. (2003), the vibrant networking in shipbuilding started significantly earlier than in other industries in Finland, even before network theories were formed. The rationale behind networking was cost pressure, business cycles and diversity of technology. The network of Finnish shipbuilding companies is wide on Finnish scale and can even measure up to those of Italy, Germany and France, the great shipbuilding countries in Europe. Most Finnish maritime companies have more or less evolved from the Finnish shipyards, especially after the bankruptcy of Wärtsilä Marine, whereas another group descend from shipbuilding companies in Western Finland, in Rauma and Pori. There are various spin-offs, such as marine engines, propulsion, fire protection and naval architectural information systems. (Viitanen et al., 2003) Also, even prior to the networking project, eight of the maritime industry companies became partners in a company founded in December 2005, which started its operations in spring 2007 aiming to provide offshore capability building and market knowledge services. The company later operated as the offshore network's network administrative organization (NAO). Moreover, most of the executives within the network organizations were familiar with each other, or at least with some of the participants as customers, subcontractors or former colleagues, etc. However, when the relationships among the network were inquired about, particularly focal companies regarded their subcontractors as their strategic information; thus they were not willing to disclose the names of those organizations. Therefore, both at the organizational and individual level, the pre-network ties were multiple and multiplex. Furthermore, pre-network involvement was legitimized throughout the network and use of inter-organizational cooperation seemed to have overall legitimacy as a competitive strategy.

4.1.2 Legitimacy of the industry

In the prior study by Human and Provan (2000), the legitimacy of the industry was presented by highlighting the interest level of external bodies, e.g. state legislators and public funding agencies. Similarly, in this network case, it was studied with data on whether the state legislators and public funding agencies showed interest in the maritime industry. It emerged from the study of secondary data regarding the legitimization status of the industry in the pre-network organizational field that, in Finland, both state legislators and public funding agencies had shown great interest in the maritime industry over the decades. Not only have they funded large development programmes, such as the Finnish Maritime Cluster Programme (2007–2013), as part of the Centre of Expertise (OSKE) programme funded by the Ministry of Employment and the Economy (2016), as well as a 48-million-euro research programme for the maritime industry, "Innovations & Network" during 2009–2013 (Fimecc, 2014), but the state has also invested in shipyards during challenging times (Yle, 2014). In addition, 20 of the case network organizations were granted partial public financing for the three-year networking project. The financing and its terms had both positive and negative effects. The financing itself allowed the coordinating company to carry out the management of the networking efforts and organization of joint meetings and workshops with the network companies, the target market contacts and the participating network organizations. Therefore, the stakeholder involvement of the authorities in the form of financing had a network-enabling effect. However, the terms of the public financing did restrict the network from taking any commercial action during the project. Thus, due to the terms of financing, the nature of the networking project was an analysis of the network and its capabilities. The aim of the project was to create preconditions for the Finnish offshore industry to enter the markets as a main supplier, a prominent member of international supply consortia, or significant subcontractors on global offshore projects, e.g. in Russia or Brazil. The preconditions included creating a knowhow-based development environment in Finland, to provide the best growth conditions for business built on Finnish technology. To sum up, both the interest of the state and public funding demonstrated a high level of legitimacy of the industry in the pre-network organizational field.

4.1.3 Existence of preliminary support by potential key stakeholders

In this network case, the existence of preliminary support by potential key stakeholders was researched similarly to the study of Human and Provan (2000) by identifying and viewing the involvement and impact of key stakeholders prior to the network formation. In the pre-networking

phase, two executives acted as key stakeholders: a development manager dedicated to the maritime industry programmes of a local city-owned development company, and an offshore oil and gas expert, who later on operated as the project leader and was responsible for the network project. These two executives chose the network administrative organization and contacted the network companies and the national funding agency as well. In addition, the project plan for the three-year networking project, according to the ground rules of the public funding, was their vision. As the overall strategic orientation of network legitimacy building is reflected by the needs and interests of the dominant stakeholders in the pre-network organization field (Human and Provan, 2000), the strategic orientation reflected both the needs of the public funder as well as the two executives, who discussed the plan with the other network organizations. The overall strategy for the network project, which was manifested in the project plan in the pre-networking phase, included both the inside-out and outside-in strategies. The inside-out strategy for legitimizing the network internally included interaction between the network members, and the outside-in strategy included involving collaboration with other projects and especially with potential customers. In conclusion, the two key stakeholders were involved and committed and their overall legitimacy strategy had both inside-out and outside-in views.

4.2 Network formation phase: Network as a form

In the network formation phase according to Human and Provan (2000) and van Raaij (2006), it is important to establish three dimensions of network legitimacy: the legitimacy of the network concept, i.e. the network as a form of organizing, interaction in the network as part of legitimacy building, and the network as an entity or network identity. In addition to those three dimensions, here the network as strategic intention as a dimension (Valkokari, 2015a; van Raaij, 2006) of legitimacy is also studied. In the prior studies of the network as a form by Human and Provan (2000) and van Raaij (2006), the organization's understanding and experience of working in a network setting and also the role of the NAO were investigated.

The empirical data and codes used for the analysis of the status of legitimacy of the network as a form in the network formation phase are presented in Table 11. In this case network, the network as a form was researched first by looking into the mechanism whereby the network membership was established and then the types of organizations that were members of this network to comprehend what kind of network, in general, was concerned. After that, the firm-level tasks, ties between the

Table 11. Empirical data and codes used for the analysis of legitimacy in the network formation phase for the network as a form

Network formation phase: Network as a form

Analysis: Familiarity of networking as a form of organizing via the following mechanisms:

- **Establishment of network membership**
  - § Public funding grant instructions:*"Public funding - terms - scope of funding"*
  - § Participants of the project reported in Strategy reports: *"Str. reports – Participants"*
  - § Participants of the project that received public funding: *"Str. reports – Public funded NW organizations"*
  - § New project participants reported in board meeting memos: *"Board meetings - NW organizations - new participants"*
- **Types of organizations the network is comprised of**
  - § Survey, 1st interview: *"Description of company's business"*
- **Presence of the network organizations in the target markets**
  - § 1st interview: *"Current presence"*
- **The supply or value chain of the network: firm-level tasks and ties between the firms and the competition**
  - § 1st interview: *"Current Supply of company for NW and customer"*
  - § 1st workshop: *"WS - WS1- Group work - competing situation in the NW"*
  - § 2nd workshop: *"Relations to other NW orgs"*
  - § 3rd interview: *"Network types (customer, competitor, supplier, subcontractor) company operates in"; "NW strategy of the firm – Content"; "NW strategy of the firm – Content"*; *"Network structures, hierarchical or partnership, the company currently operates in"*
  - § 5th workshop: *"Part entities of product matrix"*
- **Organizations' understanding and experiences of working in a network setting:**
  - **Working as a network's focal company**
    - § 1st interview: *"Capabilities of taking and sharing supply scale and responsibility"; "Customer of ideal future supply"*
    - § 3rd interview: *"Network's FC - company's operation as FC or not"; "Networking strategy - roles of the company as FC"; "Networking strategy - roles of the company as FC - Both FC and not"; "Networking strategy - roles of the company not as FC"*
  - **Familiarity with partnering**
    - § 3rd interview: *"Networking as part of company's written strategy - company's goals"; "NW strategy of the firm – Content"; "Which part of organizations competitive strategy does partnership or networking support or resonate in particular"*
- **Networking as part of organizations strategy: internal and external legitimation strategies**
  - § 3rd interview: *"Networking as part of company's written strategy - company's goals"; "NW strategy – existence of special"; "Networking not as part of company's strategy – reasons"; "NW strategy of the firm – Content"*
  - **External: funder**
    - § Secondary data: *"Public funding- terms - scope of funding"*
  - **External: customers**
    - § Observations in and memos of 3rd and 4th workshops and visit in Brazil: *"WS - WS3 - Customer interface Brazil – Agenda"; "WS - WS4 - Customer interface - Russia - Rus plans and interest to Fin NW"; "Customer interface - Brazil - Meetings in Brazil - Plans and views on Fin NW"*
- **Strategic guide for networking**
  - § Project plan (Pp): *"Pp - Aim of the project";"Pp - Study on network supply";"Pp - Capability building strategy"; "Pp - Customer interface"; "Pp - Restrictions of public financing";"Pp - Action plan - Strategy work - Study of Product and service supply"; "Pp - Action plan - Study of Networking strategies of NW organizations"; "Pp- Action plan - Network's internal services"; "Pp - Action plan - Customer interface Brazil"; "Pp - Action plan - Customer interface Russia"*

firms and competing situation were explored to find out what kind of supply or value chain the network organizations would form together. Finally, the experience of the organizations acting as a focal company in their current networks, their current presence in the target markets and the role networking plays in the strategies of the network organizations were examined to find out the organizations' understanding and experiences of working in a network setting.

The three-year networking project had a project plan as a strategic guide for the network operations, thus directing the legitimacy building of the network as a form. The results of the analysis regarding network as a form are elaborated in more detail in the following sub-sections.

4.2.1 Network membership, network organizations and presence in the target markets

The underlying reason for networking by an intentionally gathered large group of organizations was joint market entry into the relatively challenging target countries of Russia and Brazil in oil exploration and production. The two key stakeholder executives in the pre-network phase contacted the major Finnish players in the maritime or offshore industry and their subcontractors, and only one of the major players declined participation due to the policy of their international corporate management. Membership of the network was created either via the granted partial public financing or sign of interest to participate together with a yearly fee to the NAO. Public financing was applied for as one entity and equal sums were granted to 20 network organizations, besides the NAO, for which the larger granted sum reflected its administrative workload. The 20 contacted organizations applied for a joint grant, which required them to participate and report their networking activities in order to receive the grant. Unfortunately, one of the 20 original network organizations was forced to wind down their business in the first year and leave the network due to the market situation. However, six other organizations joined the network, two from the beginning, and four during the second year. Nonetheless, those six organizations, which were not granted public funding, also paid the yearly fee to the NAO for administration along with the other network members. The organizations that joined the network later, reported that their reasons for joining were their desire to obtain information about the industry, their own organization and expectations, as well to "bring something to the table" of their own. Also, the companies were keen to speed up their own business efforts and had the idea that, without networking, entry to larger projects would not take place. Therefore, the network was a "closed" organization with specific members and a boundary, yet the boundary was flexible: members were included if they showed interest, and were willing to participate in both activities and costs.

The results from the survey revealed that the network was formed of different types of organizations (n=20) (Figure 23). Most of the organizations (55%) participating in this network were independent companies. 30% of the organizations were subsidiaries of international organizations and 15% were other types, such as state-owned organizations. Six of the independent organizations can be regarded as small and medium-sized companies (SMEs), with a turnover under 50 million euros (MEUR) and less than 250 employees. The main branch was engineering (40%). The turnover of half of the organizations was 10–100 MEUR and turnover in the offshore business was mostly 1-10 MEUR (40%) or 10–100 MEUR (35%). The number of people employed by the organizations varied from 10–100 (25%), 100–250 (20%), 251–1000 (35%) and (>1000) 20%. However, the numbers of people employed in the offshore business were considerably smaller: 1–10 (20%), 10–100 (45%) and 100–250 (35%).

Of the network organizations, 18 claimed that they were currently doing business in global markets. Only two limited their current business market to Russia and former Soviet Union countries (FSU). At the time of writing, the network companies were almost all present in the target market countries of Russia and Brazil; in fact only two of the 20 companies are not present. However, their modes of presence in those countries alternate very much. One is present via the parent company, eight via representatives, two have joint ventures (JV), one via a subcontractor, three have subsidiaries there, one has both a representative and a subcontractor, one both a JV and a subsidiary and two have both a subcontractor and a subsidiary. To sum up, currently only seven (35%) of the organizations are permanently present in the target market countries, meaning they either founded a JV or a subsidiary. However, many organizations have some ties to the target market countries via parent companies, representatives or subcontractors. In other words, many of the organizations already have inter-organizational relations in the target country.

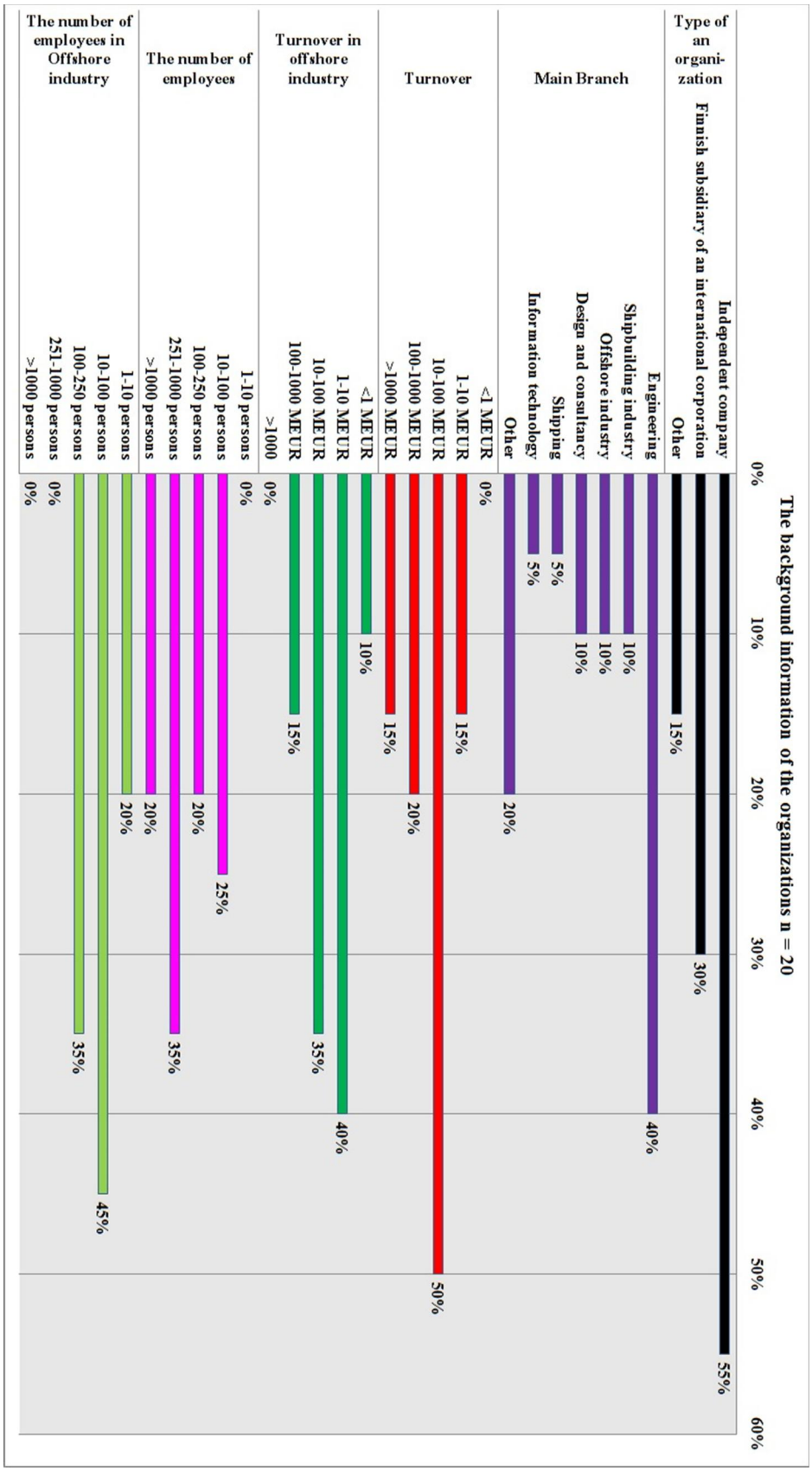

Figure 23. Background information of the network organizations

4.2.2 Firm-level tasks, ties between firms and competition within the network

In the first interview round, the offerings of the network, i.e. firm-level tasks (Pathak et al., 2014) in the supply network were ascertained. Firm-level tasks are typical operational tasks, like product development, procurement, production and distribution. In a forming network, network-level interaction is in its initial stage, thus some supply network archetype elements might not yet be determined definitively. However, the firm-level tasks can be defined by the scope of supply of the organizations or companies. Mapping the firm-level tasks in the supply or value chain also illustrates the potentially overlapping scope of supply that might cause competition within the network. In Figure 24, the scope of supply of the network organizations is mapped in a supply chain matrix. The firm tasks that the network organizations currently have in the upstream offshore value chain are marked with the letter "C". The figure shows that the network organizations offer services like product development tasks, such as engineering and design, as well as various product manufacturing tasks. Overall, the figure reveals that the network supply covers many of the products and services required for the joint production and delivery of a major offshore production structure, which was the original motivation for the network formation. Therefore, the total offering shows that no major parts were missing in the supply network regarding offshore drilling or production units in the offshore value chain network. Thus, in principle, the network would have been able to offer both smaller and larger (i.e. oil drillship) entities jointly. Additionally, the figure also reveals that several tasks do overlap and could potentially cause competition within the network. The largest potentially competing groups are engineering, design, project management and technical procurement tasks (A, D, E, F, N, U, V, W) and propulsion equipment and thrusters (B, R, S, W).

Like firm-level tasks, the ties between the firms (Pathak et al., 2014) might or might not exist in the formation phase of the network. However, there are attitudes and approaches towards various stakeholders in general that apply to a new network as well. In the third interview round, the attitudes towards collaborating with competitors were enquired about. Here the focus was on competition and the collaborative attitudes towards potential competitors within the network. Among the potential competitors, there were three types of attitudes: partnership "P" and collaboration "Y" leading to co-opetition, and non-collaboration "N" (Figure 24).

Network organizations/ Various operations in value chain	A	D	E	F	U	N	V	J	G	C	W	B	R	S	M	L	T	P	Q	X
Full responsibility of the project																				
Project services, engineering, design and consulting	C	C	C	C	C	C	C				C									
Project management		C	C	C	C															
Concept development and evaluation	C	C	C	C	C		C													
Basic design	C	C	C	C	C															
Detail design		C	C	C	C															
Technical procurement		C	C	C	C															
Design and delivery of the design and operation support systems	C																			
Machinery and equipment							C	C												
Larger part entities							C													
Engineering industry products									C											
Hoist and cargohandling equipment										C										
Integrated entities											C									
Energy production equipment											C	C								
Electricity/automation systems											C	C								
Electric and drilling equipment drives											C	C								
Propulsion equipment and thrusters											C	C	C	C						
Other electric drives											C									
Winches and mooring equipment													C							
Fire extinguisihing equipment															C					
Production of plastic composites																C				
Oil production equipment/systems							C													
Development of shipyard and offshore production plants																	C	C		
Steel materials and structures																	C		C	
Support for operation	C	C		C		C				C	C	C	C	C						C
Collaboration with competitors	Y/P	Y/P	Y		Y	Y/P					Y	N	N	Y/P	N					

Figure 24. Current [C] firm-level tasks of the case network and organizations' collaboration [Y], partnership [P] or no collaboration [N] with their competitors (Suominen and Breite, 2015, p. 8)

Four of the organization's potential competitors were partners with one or more competitors. One of them commented on their partnership as follows:

"We have strategic partners that can also be competitors that have been evaluated as useful; therefore they are even dragged along, although sometimes competitors are hard to get on board". – Company A, CEO

Some of them had single projects together with their competitors. One of the organizations collaborated with another company in that they were both present in front of the customer together with their own references and in one project they even had three organizations working in parallel for the customer. The third organization was collaborating with their competitor on products that did not overlap and they also had one competitor as a true partner. One had started a partnering alliance with their competitor, yet in competing situation they compete as usual. They saw that this

co-opetition model could also be carried out with their direct competitors within the network. One respondent found that the level of collaboration or partnership with their competitors was dependent on the product: if the product entity was very large they did not see any barriers to collaborating with their competitors. In their opinion, in a potential special purpose company, the level of collaboration would be divided according to the partnership and therefore the competing situation would not matter.

However, there were three organizations where collaboration with a competitor did not happen or was even strictly forbidden. One commented that in a joint project, only one of the competitors could participate at a time. Another pointed out that

"Even discussions with competitors are forbidden and we would have to prove that we are not forming a cartel with the competitor." – Company M, Business Manager

The third said that their corporation was against collaborating with competitors and they had found similar attitudes on the opposite side: their competitors had been instructed not to use their machinery. Therefore, they did not have any competitors left to collaborate with.

The results also revealed that company groups, i.e. potential competitors, within the network had various outlooks on competition. Figure 24 shows that the design and engineering companies, as well as the propulsion equipment and thruster manufacturers, form their own sub-clusters within the network. However, they differed in their attitudes towards collaboration with competitors. The design and engineering companies collaborated, often even partnering with their competitors with the aim of joining their capabilities.

"[Our networking] is [x]-capability based. Depending on the solution we gather a network around us, or join another network. Both ways." – Company A, Sales Manager

Our vision of the network has been built based on design network and flexibility due to our capacity needs. Also, we have aimed at price competitiveness by sourcing bulk parts elsewhere… We have also thought about EPC [Engineering, Procurement and Contracting] management… We have been developing this model of network building with other design and engineering companies for the past 5-6 years. It also depends on the commercial situation and performance, meaning that partners are accepted and rejected through a gate-model… One part of the networking strategy is that there should be something to source from the outside… Thus our network is a competence network: the

network has competence that we are lacking. In our networking events we have also emphasized that a customer may appear via smaller companies… with [competitors] cases 1 and 2 there has been another focal company, but with 3 we are in a partnership. With them we could think about a consortium and we have founded a company together." – Company D, Managing Director

"We also network with collaboration partners. We do not participate alone in bigger (projects), but aim at partnerships, wherever that exists. Being a Finn is not an absolute value, but it makes things easier. In that sense one has to be a 'corner' patriot." – Company E, Senior Vice President 2

"We have a networking strategy in our heads. That means that we have chosen in which areas we do our core business and where we do not and use subcontractors in certain cases. Also, we have thought about our target markets… We have also set metrics for those areas in our strategy discussions, which were gone through for example yesterday. We have principles, e.g. there are roles that we would pursue and we define that in contracts. Since we do not do any production, but provide expert and design services, these roles can be agreed all the way to the pricing and assigned personnel. We seek for both capacity and specialization. – Company F, Managing Director

"Specialization means that there is no point doing everything by yourself, but to a certain extent contract them out, even the routes… [Different types of roles] yes. We aim at serving our parent company, but in a consulting role we can collaborate with competitors. Experts carry out their role in any organization" – Company F, Managing Director and Project Manager

"We have different types of networks for different situations. With customers we do not have a partnership per se, but close collaboration. With competitors we do not have a partnership, but also collaboration. For me it is more important to discuss partnerships, not so much customers or competitors. With company D and S, also company Å [outside the NWP project] we are both and, in other words, something close to a partnership. Subcontractors, we include new ones depending on the needs, but a network already exists." – Company U, Area Manager

In contrast, only one of the propulsion equipment and thruster manufacturers (B, R, S, W) had applied a true partnering and co-opetitive strategy towards their competitors, one collaborated, while two did not collaborate or collaboration with competitors was forbidden.

"There are collaboration partners in many directions. [Subcontracting and partnerships?] Both forwards and sideways. With competitors, collaboration [is] strongly forbidden." – Company B, Marketing Manager

"Networking is towards subcontractors and customers. No collaboration with competitors. With W we could jointly create a package solution, but unofficially, since collaboration is 'forbidden" in both groups, it would have to be carried out 'under cover', as the groups are so against it." – Company R, Executive Vice President

"In EU-funded R&D projects we are able to work with competitors, e.g. with company 4. There are also strategic alliances, but it depends what is the issue. For example, regarding IPR we have a clear line, which is non-negotiable, but other business elements are negotiable." – Company W, Vice President

"Collaborating is the way to do business today, which should be used as much as possible regarding mutual interests; once the situation turns into competition, then the game is on." – Company S, Managing Director

In addition to direct competition, the supply network's offering shows that there would be issues within the network caused by small numbers of those making tenders and therefore potential opportunism that possibly would hinder networking. Also, in the first workshop, the organizations discussed the problems that the structure of the network offering would bring. First of all, almost all of the major players of propulsion production are located in Finland, thus creating a possible monopoly problem that the competition authorities might pay attention to due to the antitrust laws. Secondly, alleged preferential pricing for network projects could cause problems within the network organizations' competitive environment. Thirdly, parallel offering on the one hand by an individual company and, on the other hand, by the network's joint commercial project may cause conflict. Fourthly, in major companies, corporate policies may bring challenges, as headquarters do not want their Finnish branch to collaborate locally in Finland with their global corporate competitors.

4.2.3 Operating as a network's focal company

Half of the network organizations stated that they were operating as focal companies in their current supply network, of which approximately one-fifth were leading organizations and one-third in some sort of leader position (Table 12). However, less than half of the organizations did not operate as focal companies in their supply network, of which a little over one-fifth did not operate at all as focal companies and less than one-fifth were not in a leading position for the time being. In addition to those who claimed to operate as focal companies to the subcontractors in their supply networks, those who stated they were some kind of focal company in their supply networks had several views on their role. For example, they pointed out that they were not leaders of the entire network, but only to their subcontractors within their own discipline, such as design, or in part of the supply network, such as for the Finnish sub-assemblies or smaller pieces of equipment, or leaders on a small scale, especially if no other leading company existed in that part of the network. The status of their company as the focal company could vary depending on the situation: in some cases, they acted as a focal company, whereas in other situations the relationship was more equal, for instance sometimes alliances could be somewhat equal regarding power balance. Those who did not operate as a focal company or not currently, did also have various views on the focal company role. One commented that they would like to pursue the role, and another that they might consider it in some project context, and some felt that for instance in an export chain depending on the case, they considered the one who supplies the largest part of the delivery as the focal company.

Table 12. Current operation as their network's focal company

Status of operating as focal company	***n = 22***
Operating as focal companies in their current supply network	11 (50%)
- operating as leading organizations	4 (18%)
- in some kind of leading position	7 (32%)
Not operating as focal companies	9 (40%)
- not at all as the focal company	5 (23%)
- not in a leading position for the time being	4 (18%)

As within the Finnish maritime network, there are also major players in the industry. One potential contractor was discovered among the organizations that could act as a potential hub firm or focal company for the entire supply network in a future joint commercial project. Many of the organizations were eager to move up in the value chain from their current position. Three service providers and four product suppliers were ready to take responsibility for part of a project entity. Also, four service providers were ready to deliver a full project entity in the future, and four product suppliers were prepared to deliver larger sub-assemblies than currently and act as potential sub-network hub firms.

Additionally, the organizations were accustomed to partnering: 11 out of 22 organizations saw their current network as partnership-based or a combination of hierarchy and partnering, whereas the other 11 organizations considered their network more of a hierarchical one. However, it is not easy for the companies to draw the line between the semantics of partners and partnerships and practical operating in hierarchical relationships, as one company puts it:

"The words partnership and partner are used, but if the contracts were opened, in practice they are quite straightforward hierarchies: the seller sells and the buyer buys on a fixed basis. Similarly, in subcontracting for example, yearly contracts are hierarchical. In alliances and consortiums there is collaboration and there is a mechanism to deal with grey areas. In partnerships the partners share the risk in a genuine manner." – Company W, Vice President

Moreover, the focal companies in particular did not want to disclose which companies were their subcontractors since they considered that to be strategic information. Furthermore, in the interviews, a couple of the organizations expressed their view on how Finnish organizations have a tendency to form alliances and networks with foreign companies rather than with their domestic peers, which could potentially hinder networking in this particular setting. Also, it came up in many interviews how Norwegian offshore firms in particular are aligned together as a unified front; one mentioned that even Estonian companies network well in order to enter the Norwegian offshore markets.

"In Norway they have this 'fjord culture', where they collaborate and 'share the cake'." – Company A, CEO

"We have been contacted even by our Norwegian competitors to create a common front… Sometimes exclusivity demands are placed on us – the worst are the Finnish companies. With Norwegians you stay as a supplier and you are tossed out only if you price yourself too high or do

not deliver what was agreed. In Norway when you are part of the inner circle, you stay there. The domestic companies do the sourcing constantly and they think that a good supplier cannot be from Finland. In the past few years some companies have made their escape to China, but they are coming back." – Company H, Director (Sales and Marketing)

Potential mimicking of the Norwegian way can be seen as one way to learn from other networks, but if it leads to ignoring the potential of this domestic network, it might become a barrier to the network in question.

4.2.4 Networking as a strategy – internal and external legitimacy-building strategies

As mentioned in the pre-network phase results, the network as a form of organizing was well understood, familiar and used within the industry. Also, in the third interview, 12 of the 21 companies claimed that networking was part of their written strategy. However, networking being part of the company strategy presents itself in different ways: only four companies claimed to have a specific networking strategy, whereas eight did not have a specific networking strategy, but had networking integrated within their strategy. In four organizations, networking was not part of their strategy per se, but it was involved in the way operations were carried out.

"Networking is visible in the strategy, it is one part. The surrounding world is estimated from various angles and it is a paramount issue." – Company X, CEO 2

"It [networking strategy] is not written specifically in the strategy of the company, but it is included in various forms. In our current strategy we have sought for concrete issues to commit to, including certain issues regarding networking. In that sense networking is part of our strategy." – Company B, Marketing Manager

"Literally probably not, in other words, it is not mentioned in the strategy, but networking is in the ways we operate. The strategies portray markets, customers, partners, suppliers, joint ventures. Almost every type of networking is part of the group." – Company W, Vice President

Three companies were in the middle of a strategy rebuilding process. The four organizations that reported having a specific networking strategy differed greatly in their background. Although they had some similarities, there were also differences in their network strategy approach. Three of them had both international and national views. The global technology company handled their customer

demand with a supply network strategy with low production costs for serial production and a short lead-time supplier network for one-off production, and also had customers as their partners.

"We have a particular networking strategy [within the corporate strategy]. It is like riding with two horses. For products of serial production, we carry a global strategy, which is based on low production cost. For customized products, we carry a local network strategy to ensure flexible deliveries with a short delivery time….With competitors we have no collaboration. It is banned from the corporate level, the group resists it." – Company R, Executive Vice President

The expert service provider was networking both in research and business while having a continuum of collaborative approaches from common projects to shared physical premises; they also had a legal obligation to network with certain authorities.

"Networking is part of our strategy, also partly defined by the law, since we are a security authority, producing information for ministries and other official parties. Networking in research is in good shape at every level. In other words active collaboration with the major universities. We also have constant development with the Russians. At international level we have projects….in Asia, South America, Africa. Networking with companies in research is via projects, but also direct assignments or consulting or joint studies. With customers we may create a new service concept based on customer needs. Additionally we have EU- and other public-funded projects which are partnered with companies…." – Company I, Project Manager

The engineering works, a subcontractor for large manufacturers, used networking as a survival mechanism; devoted to their pioneer-like network strategy they made customer orientation a priority, as the company aimed to be in their customer's key supplier category.

"Networking has been added [to the strategy] as a special part, because without networking there is no future. We have been in a pioneer role, others have been more cautious…. The pattern is clear, it all starts with our customers. We aim to get into the so-called key customer category and we have won some and we aim to expand. Of course not only in Finland, but in Scandinavia." – Company H, Director (Sales and Marketing)

The fourth company with a specific networking strategy was an engineering company that employed a two-fold approach: building flexibility into their service supply capacity and competency beyond their company boundaries**.**

"Our vision of the network has been built based on design network and flexibility due to our capacity needs. Also we have aimed at price competitiveness by sourcing bulk parts elsewhere… One part of the networking strategy is that there should be something to source from the outside… Thus our network is a competence network: the network has competence that we are lacking." – Company D, Managing Director

The eight companies that did not have a specific networking strategy had networking integrated within their strategy; however, these companies did emphasize the importance of networking within their strategy. Depending on their position in the supply chain, networking was intertwined with other operations and various markets: with sales and marketing, suppliers and subcontractors and in various country-specific strategies for one company, or only towards their subcontractors or distribution channels for two of the companies. It is noticeable that networking might not have been the choice for every business branch: in one of the companies, dyadic alliances were preferred in certain geographical areas occasionally.

"No particular [Networking strategy] in offshore… In Latin America sales does not go in traditional ways, but alliances are vital."– Company N, Senior Sales Manager

The integration of networking within the company strategy may have arisen in the form of chosen partners.

"We have strategic partners that are even dragged along, although we could compete with them… since our strategy is to exploit our special capabilities, not to produce standard solutions… We are parts of networks that we either manage ourselves or are run by others – it is a mixture. If we are managing the network they are more partner networks, although some (partners) are there in a subcontractor status, however they are partners in spirit. " – Company A, CEO

In this company they explained that they gathered their own network or joined the networks of others, depending on the case. Networking may also have been affected by the customer, by gathering the project suppliers from amongst their competitors. The remaining four companies reported that the integration of networking within their strategy was shown particularly in their operations. Four companies, three of them global technology companies, commented that networking was not mentioned in their strategy per se, but was very much present in their operations.

[T] has a networking strategy in the sense that there are certain issues where the responsibility has been assigned to the network: design, production, turnkey deliveries. For instance, we do not do design of work drawings ourselves at all, it is assigned to the network. Also system integrators have entered [our network], which means that we procure X systems as working entities and Y packages have long been integrated, amongst others. – Company T, Executive Vice President

Three of the companies were in the process of reframing their strategy. For all of the organizations, apart from one, operating in the offshore markets was a strategic business goal. Also, the national funding agency had had experience in funding the maritime industry itself, together with various networking projects (Tekes, 2013), as well as maritime cluster reports (Karvonen et al., 2008; Viitanen et al., 2003) for some years, therefore they were also familiar with the network as a concept or form.

There were several events arranged together with potential customers from the two target countries, which will be described later. The idea of a network of Finnish organizations was introduced and how the counterpart understood the potentiality of the way of operation was discussed. In all of these events, the Russian counterpart regarded the idea of a networked organization as an interesting proposition aiming in the right direction. However, they mentioned that in order to implement a networked type of action, a concrete target project should exist.

"Regarding the networking project, we will convey information to our production planning department of which representative should be included in the discussions in the future. Also, the drilling department and two research and development institutes will be informed. The institutes will be informed particularly regarding the products, equipment and fittings produced in Finland." – Russian Company Ro, representative at Workshop 4

"Our directors are already informed about the networking project. However, we feel that it is difficult to carry out the discussions at a general level. The discourse would be easier if we had a subject to investigate… We have a collaboration group at our company for co-operation and since we do not have a project at hand, I will inform the collaboration group of the networking project's interest… The co-operation can be made within the framework of the collaboration group, which will then decide the possible options." - Russian Company Ga, representative at Workshop 4

"The idea of studying the potential options with institutes that do the preliminary research on oil and gas is good. Collaboration with the networking project is one possible choice. When the

technologies are ready, the tenders are practically won." Russian Company Lu, representative at Workshop 4

"In Finland, Nokia is a good example of building new joint systems. Creating a system that jointly participates in tenders is something to endorse, since besides good equipment, Finland has a good system to offer." - Russian Energy ministry, representative at Workshop 4

In Brazil, the idea of a network type of action was considered interesting as well. According to the Brazilians, the problem lay in practical issues, e.g. with contracts. In other words, the counterparts saw the network as a legitimate unit, yet faced with potential problems of organizing.

"The idea of the networking project is interesting. The problem is the execution in practice. I mean how much time do busy people have to put into drawing up the contract? I would suggest taking the interest group Si as a pathway for the networking project, since shipyards are a part of Si anyway and also most of the companies are collaborating with Si. From Si it is possible to get a listing of Brazilian production companies. Direct sales between companies is more difficult." – Company Eb, CEO

We are interested in collaborating with the networking project…Our procurement strategy is based on sourcing specific sub-assemblies… Therefore, further discussions would require a more refined approach for sub-assembly supply. – Company En, CEO

4.3 Network formation phase: Network as a strategic intent

Van Raaij (2006) and Valkokari (2015a) have covered the strategic intent of a network in their studies. Van Raaij (2006) does not cover the subject so thoroughly but mentions the legitimacy of the topic that the network addresses, meaning the goal. Valkokari (2015a), in her study of network strategic intent, has pointed out that network-level objectives, as well as roles and responsibilities are part of the studied strategic intent. In this case network, the strategic intent is explored by examining the network-level objectives, the strategies that the network worked out, the ultimate goals that the organizations expressed and finally, the potential network governance forms that the network organizations envisioned.

In the case network, during the network project, the network as an entity that was legitimated was an equal group of organizations, each having a seat on the Board of Directors. Also, the group of organizations had a joint agenda of working together to determine the network's modus operandi for the future. During the project, the organizations envisioned their strategy of the network according to the project plan as well as their entity or identity, which will be discussed later. However, as mentioned earlier, the terms of the public financing restricted the network from taking any commercial actions during the project. As the focus of the networking in the network formation phase was not on marketing or sales, the effect was two-fold. On the one hand, it shifted the network towards joint capability- building efforts. On the other hand, without a concrete commercial case, there was no transaction to be discussed, and marketing and sales collaboration to be practised.

The empirical data and codes used for the analysis of the status of legitimacy of the network as strategic intent in the network formation phase are presented in Table 13. The results of the analysis are then elaborated in more detail in the following sub-sections.

4.3.1 Network-level objectives

In the case network, there were two types of network-level objectives. The first types of objectives were written and related to the three-year networking project. These objectives written in the project plan were monitored both by the public financier together with the Board of Directors consisting of one participant from each of the network organizations. According to the project plan, the aim of the three-year networking project was to *"create the preconditions of the Finnish offshore industry to enter the markets as a main supplier, a prominent member of international supply consortiums, or significant subcontractors to global offshore projects in Russia or Brazil."* In addition, in the project plan it was outlined that, *"A part goal is to create a capability-based development environment in Finland, providing the best growth conditions for business based on Finnish technology. In order to reach the goal, a network of Finnish companies will be created, which will be able to supply the most extensive service to its customers by offering all the knowhow that the maritime industry has developed in Finland. In the operations model of the Finnish network, a solution for increasing the share of local marine industry is sought by means of a Finnish network. Possible part solutions are e.g. joint ventures, collaborative production and technology transfer. However, the aim of the entity is the business growth of the companies operating in Finland. During the project, new business opportunities for Finnish–developed niche technologies, as well as new niche markets in the offshore business will be explored."*

Table 13. Empirical data and codes used for the analysis legitimation in network formation phase: Network as a strategic intent

Network formation phase: Network as a strategic intent

***Analysis*:** Network-level strategic objectives and their output

- **Where the network-level objectives are drawn from, how they manifest and how they are monitored**
  - § Network projects strategy objectives in Project plan:
    - § *"Project plan - Aim of the project"*
    - § *"Project plan - Study on network supply"*
    - § *"Project plan - Capability building strategy"*
    - § *"Project plan - Customer interface"*
    - § *"Project plan - Restrictions of public financing"*
    - § *"Project plan - Action plan - Strategy work - Study of Product and service supply"*
    - § *"Project plan – Action plan – Capability building strategy"*
    - § *"Project plan - Action plan - Study of Networking strategies of NW organizations"*
    - § *"Project plan - Action plan - Customer interface Brazil"*
    - § *"Project plan - Action plan - Customer interface Russia"*
    - § *"Project plan - Action plan - Network's internal services"*
  - § General terms of the public funding of R&D projects
    - § *"Public funding - terms - scope of funding"*
  - § Network project's strategy objectives and their follow-up in board meeting memos:
    - § *"Board meetings - Aims of the project"*
    - § *"Board meetings - Tasks of executive board"*
    - § *"Board meetings - Action plan - links to other projects"*
    - § *"Board meetings - Action plan - next projects"*
    - § *"Board meetings - Action plan - next steps"*
    - § *"Board meetings - Action plan - Feedback from the NW orgs"*
    - § *"Board meetings - Action plan execution"*
    - § *"Board meetings - Action plan execution - customer interface general"*
    - § *"Board meetings - Action plan execution - customer interface Brazil"*
    - § *"Board meetings - Action plan execution -customer interface Russia"*
- **The mainstream strategy of the network:**
  - § Survey (Appendix 2 Codes used in the empirical analysis: Codes of Strategy 2 phase: Capability-building strategy of NW)
  - § 2nd interview round - complete (selected parts reported here)
- **Potentially conflicting views on network's strategy**
  - § 5th Workshop Group work results: *"WS - WS5 - Group work - Part entities of Product matrix"*
  - § 6th Workshop Group work results: *"WS - WS6 - Group work - Business plan of NW Joint Products"; "WS - WS6 - Group work - New product development for NW"*
  - § Network organization's views on network project's goal achievement in 3rd interview round:
    - § *"NWP goal achievement"*
    - § *"NWP goal achievement - gains exceeding the original plans"*
    - § *"NWP goal achievement - lack of gains"*
    - § *"Satisfaction with NWP"*
    - § *"Satisfaction with NWP - comment on score"*
  - § Feedback of NWP participants in Strategy reports: *"Str. reports - Feedback from the NWP participants"*
- **Potential network governance forms**
  - § 1st Workshop: *"WS - WS1 -Group work - potential NW structures"*

According to the action plan part of the project plan, the networking project had three components: 1) customer interface, 2) internal services and 3) the network's internal strategy process. The customer interface included a plan to collaborate with both potential Russian and Brazilian customers. The internal services included providing market knowledge and training services for the network organizations. The network's internal strategy process comprised the following: defining solutions for the network's structure, joint strategy, marketing and approaches to various projects, discovering potential new product ideas, mapping the extent of Finnish supply in the network, creating a business model and choosing an example commercial project. According to the general terms of the public funding of the R&D projects, the acceptable costs should concern "*research, development and innovation activities. However, production, marketing, sales (e.g. travel costs, brochures, advertising costs, trade fair, trademark or representation expenses) are not acceptable costs.*"

The implementation of the project plan as well as the action plan along with strategy building of the networking project was steered by the Board of Directors. The tasks of the Board of Directors were approved in the first board meeting. The tasks included approving plan and budget changes and specifications, follow-up and steering of the project. Additionally, the board was assigned to promote networking in the offshore industry in Finland as well as being 'a lobbyist' of the offshore industry towards other quarters. The Board of Directors assembled in one preliminary and seven board meetings. In each of the meetings, they dealt with the progress of the action plan of the project plan and made steering decisions. In practice, the strategic aims of the networking project were dealt with as a series of networking events (Figure 25).

The series of network events included interviews, six workshops and one survey. Each of these events had a particular theme derived from the action plan of the networking project's project plan. Furthermore, the themes of the events were connected to the network project's strategy building goals. Moreover, the strategy work on each event was aiming at building legitimacy either with inside-out or outside-in legitimation strategy. In the next three sub-sections the two main strategies of the network, i.e. the capability-building strategy and the ultimate goal as supply network are elaborated in more detail and prior to that the vision of the network's governance is illustrated.

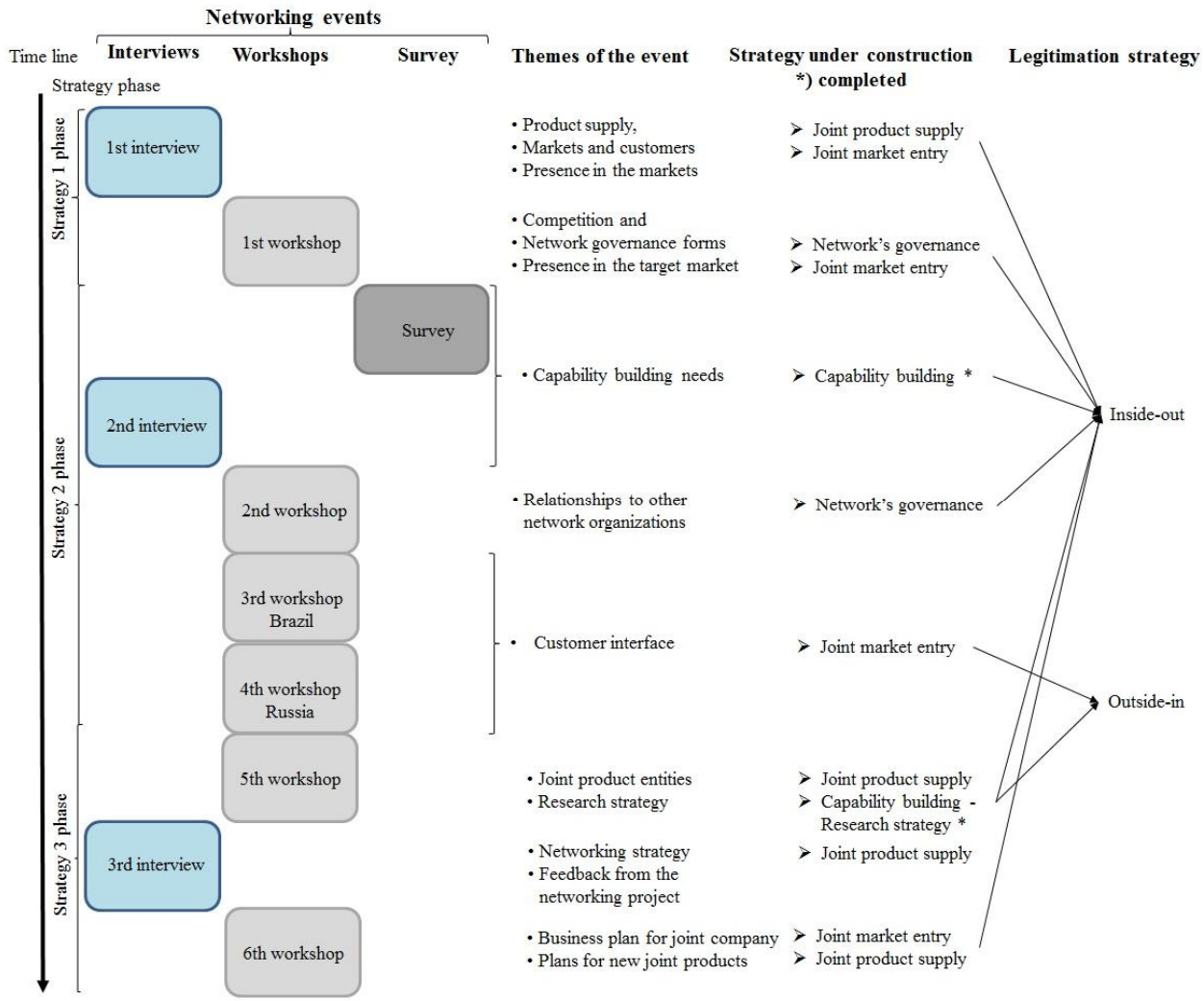

Figure 25. Networking project's collaboration events for strategy building

To sum up, there were two types of network-level objectives. The first type of network-level objective was the one of the three-year networking project, which was to create a capability-based development environment in Finland. Furthermore, the three-year project was not intended to lead to commercial execution, but to create the readiness applicable for other ventures and to produce the capability and training strategies for the offshore industry in Finland. The action plan of the project included activities both within the network as well as towards external stakeholders, such as potential customers and other projects. In other words, the project had both internal and external legitimacy-building strategies. The network was determined capable to enter the markets as a main supplier, prominent member of the international supply consortiums or significant subcontractors to global offshore projects in Russia or Brazil. Therefore, the second type of network-level

objectives was the ultimate goal of the network, which was joint market entry with commercial goals.

4.3.2 Potential network governance form

In the first workshop, the task of the network participants was to envision potential governance mechanisms for the network for joint market entry. The governance mechanisms envisioned by the network participants for large joint project-based delivery were (Figure 26): the project company model corresponding to the Network Administrating Organization (NAO) model, the contractor model corresponding to the lead organization model, and the project services model. The comparison of each model is combined in Table 14. The network did not consider collective self-governance for a large, joint, project-based delivery to the time-, quality- and risk-sensitive offshore industry for obvious reasons. However, additionally, to the NAO and lead organization models, the participants designed an interesting hybrid of a project services model.

The project company model**,** which corresponds to the NAO network governance model presented in organization theory (Provan and Kenis, 2008), is a special-purpose company, created for a production and delivery project, owned by the participants, and possibly also by the customer. The workshop participants considered this model to be clear and transparent to the customer: there would be only one interface to do business with. Transparency would be important for the sake of credibility. The downside of the project organization model is that it would need resources as early as the quotation phase, together with investments and management that would cause overhead costs. In a company founded for a special purpose, such as a project, the balance of the finances is marginally low, which causes challenges regarding the required warranties. In a gradually progressing operation, which would also include political agendas, background support could be granted in the form of state guarantees, for instance. Potentially, the customer could be intrigued by a partnership interest, especially if the project included knowhow and technology transfer intentions. Partnership interest would provide access to other partners' knowhow, yet in a competitive situation, the customer's partnership might cause mutual inconvenience. In Figure 26, the dashed line represents the pool of the supply network organizations participating in the networking project and the arrowed lines represent those organizations that would be owner participants in the potential project company or NAO.

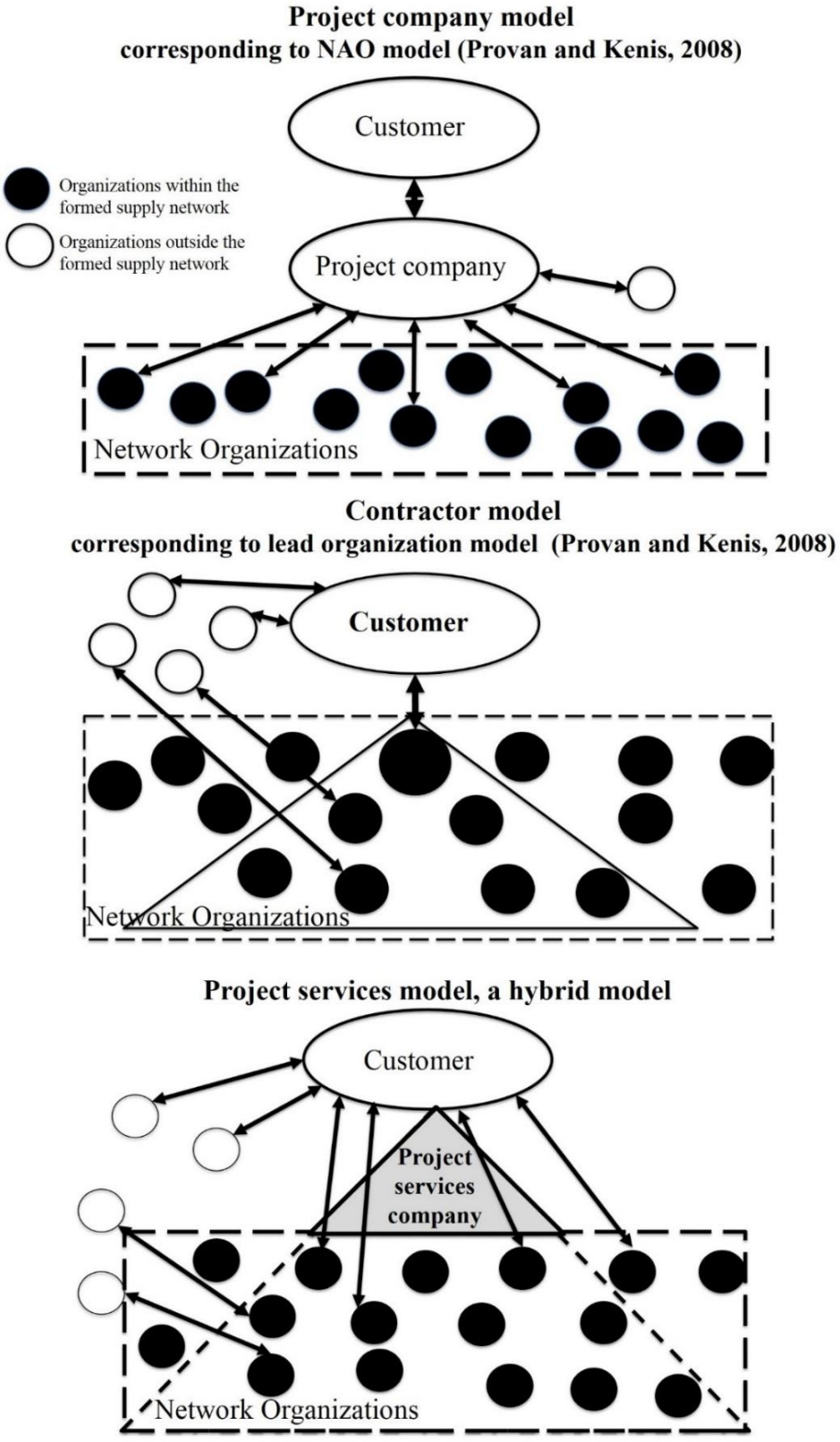

Figure 26. Governance mechanisms envisioned by the network organizations for project-based supply network (Suominen and Breite, 2015, p. 6)

The one main contractor model is a classic, project-based model. In organization theory, the model corresponds to the lead organization model (Provan and Kenis, 2008). The workshop participants found the model to be straightforward for the customer and simple in its governance. However, not all of the network organizations had the potential to act as the main contractor, while some of them did. In this model, the responsibility and financial liability fall on the main contractor, which should be taken into account while pricing the project. In Figure 26, the dashed line represents the pool of the supply network organizations participating in the networking project and the solid line those organizations that the lead organization would choose as its partners in a particular project. The arrowed lines represent both those organizations that the customer might prefer for the project or the connections, for example subcontracting, that outside companies might have with the network organizations.

In the project services model, which is a kind of hybrid of the two mentioned above, i.e. the NAO and lead organization models, the network organizations would do business separately with the customer under their own contract. However, in the hybrid project services model, the network alliance would be marketed and the customer made familiar with the network alliance from early on, while the network partners would be committed as part of the Finnish network alliance. The added value for the customer is the extra integration between the network organizations. The network would be carried out with “Project Services Agreement” type of contracts, in which the issues promised to the customer are agreed in advance. The advantages of this hybrid model are apparent as the customer does the decision making during the project’s timeline: the greater the quoted entity, the more difficult the decision is to make. The downside of this model is letting the markets work and make decisions with separate elements. On the one hand, competitiveness can be achieved with separate commercial invoicing, but, on the other hand, the risks might be sold too cheaply, without collecting the input additional value. The challenge of this model is to showcase the entity together with the governance: it is hard to realize the added value promised by the network alliance due to the many commercial contracts with different terms. In Figure 26, the dashed line represents the pool of supply network organizations participating in the networking project and the triangular dashed line the organizations that have made a project services agreement with the customer. The project services company triangle represents the marketed Finnish network alliance “brand”.

Table 14. Comparison of network governance forms envisioned by the network organizations

	The Project company model, i.e. Special Purpose Company, SPC model	*Project Services model, a Hybrid model*	*One Main Contractor model*
Description	Company founded for one project	The network consortium is marketed and customer is familiarized with the consortium from early on, while the network consortium partners are committed to be part of the Finnish consortium. The network organizations do business separately with the customer under their own contract.	Classic, project based model, where one of the network organizations acts as the main contractor and partners with those network organizations that the main contractor sees fit.
Ownership	Project company owned by the participating organizations	The network organizations do business separately with the customer under their own contract. The consortium would be carried out with"Project Services Agreement" type of contracts, in which the issues promised to the customer are agreed in advance.	All organizations act as independent organizations, yet one of the network organizations act as a Main Contractor.
Corresponding to NW governance forms	Network Administrating Organization (NAO) (Provan and Kenis 2008)		Lead-organization model (Provan and Kenis 2008)
Pros	The model is clear and transparent for the customer, as only one contact surface. Good opportunity to decide the amount to be invested while drawing up the project budget. Customer could be interested in partnership interest, especially if knowhow and technology transfer are	The added value for the customer is the extra integration between the network organizations. The competitiveness can be achieved with separate commercial invoicing.	Straightforward for customer, also regarding the project management.
Cons	Requires resources already for quotation phase, investments and management cause overhead costs. Losing the bidding still causes the overhead costs. Balance of economy is marginally low, causing challenges with warranties. In competing situation, the customer's partnership might cause inconvenience.	The customer does the decision making during the project's timeline: the greater the quoted entity, the more difficult decision is to made. The markets are left to work and make decisions with separate elements. The risks might be sold too cheap, without collecting the input additional value. The challenge of this model is to spotlight the entity together with the management: it is hard to realize the added value promised by the consortium due to the many commercial contracts with different terms.	Only few network organizations have potential with their relationships, reputation and credibility to become a Main Contractor. All the responsibilities and financial liabilities are concentrated on the Main Contractor, which should be considered in the pricing phase.
Important things and ideas to consider	Transparency vital for credibility The Finnish Ministry of Employment and Economy, whether new financial instrument could be framed for biddings. State quarantees could be potential exterior assistance with warranty.	From early on the consortium offering should be superior and the consortium have a joint vision, since not only does the customer make the contract, but also the selection of the companies. The value-added that the customer could be offered is the responsibility of the integration and divided liability on behalf of the network.	

In the discussion, the network organizations pointed out that the focal points regarding any of the chosen models were that they should yield added value, which should be identified, listed, developed and marketed to the customers. According to the network organizations, all three models lacked the potential involvement of local organizations in the target market countries, which in this case are Russia and Brazil, both of which emphasize the significance of local input. If the entity were offered via a target market organization, the entity would have a local face; in such projects, for instance, the shipyard or shipyard company could be a local one in the target market country. The potential value propositions that the network could make would be risk management. Risk taking and liability of production outside Finland has to be considered alongside the possible negative features of business culture in target markets, such as corruption. The Norwegians have a network organization for the offshore industry called INTSOK, which could be a benchmarking target for forming networks. To sum up, the network organizations envisioned multiple approaches for network governance forms and emphasized the required agility in business operations.

4.3.3 Capability-building strategy

Since commercial marketing and sales operations were ruled out of the three-year networking project plan, due to the terms of the public funding, the networking was focused towards capability-building views and training needs. However, a joint commercial transaction, even a collaborative bid, would have been a real-time learning case for the entire network of collaboration, yet that opportunity was missed. Therefore, during the second strategy phase of the networking project, an extensive survey was carried out together with an interview round in all of the network organizations regarding the capability-building and training needs for strategy-building purposes. However, here only the key results of that study are presented.

The three major themes needing capability building that came up in the study were: market knowledge, either general information regarding the offshore industry or commercial information and information of customer needs, technological knowledge, and networking, as some organizations saw networking as an integral part of training, which could be carried out even together with the customers. It is noteworthy that these three themes were mainly required in different organizations, signifying different capability-building needs in different types of organizations or organizations in different phases of their new business development. This is in line with the model of Burgers et al. (2008, p. 59) regarding the exploration of technological knowledge and starting the exploration of market knowledge in the early phase of new business development.

In turn, these different capability-building needs suggest that there was different knowledge in the organizations to offer for the network to use and others to learn from.

However, 75% (15/20) of the organizations evaluated that the number of people in their organization requiring training in offshore was less than 10 persons. In six organizations, investing in offshore training was considered dependent on the existence of commercial projects – yet it was realized that without capabilities and knowledge, the chances of winning offshore projects was virtually non-existent.

"If the company succeeds in the offshore business, the need for training will increase" – Company B, Marketing Manager

"The training need for offshore arises from the customer: our primary aim is to serve the customer." – Company F, Managing Director

"As a multidisciplinary design and consulting company there are two views we want to highlight in our capability-building needs. First, what training the organization needs, and secondly, how it is accomplished. This means either learning things over time or via training. We have noticed that training in advance is problematic, particularly when there are delays between the training and task execution. With a delay the trained person might no longer be available. That is why we prefer training for a precise task. Our basic idea is learning by doing and if there is training available at a convenient time we will participate, but not in vain."– Company E, Vice President

"We are quite far in some of the offshore areas and thus have expertise in-house. On the other hand, offshore is an area where the further you go, the more you notice how little you know. Working in this area requires constant updating and more and more knowledge all the time. – Company D, Offshore Manager

There appears to be a "which came first, the chicken or the egg" type of dilemma. Some of the organizations were very keen on the idea that before any joint network actions, network building or network capability building efforts were taken, the network should have had an ongoing transaction with the customer. They did not perceive internal legitimacy building as being important. However, in the third strategy interview, eight of the organizations claimed that starting the joint training was one of the successful outcomes of the networking project for their organization.

"It has been excellent, that the training has been kicked off." – Company H, Director (Sales and Marketing)

On the one hand, capability building and training were considered important, yet in some companies investing in it was conditional to sales, although the likelihood of sales materializing without capabilities, knowledge and knowhow was next to nothing.

4.3.4 Ultimate goal as a supply network

The ultimate goal of the network can be discovered incorporated in the aims of the project plan of the three-year networking project. As the aim was to *"create the preconditions for the Finnish offshore industry to enter the markets as a main supplier, a prominent member of international supply consortiums, or significant subcontractors to global offshore projects in Russia or Brazil"*, in other words, the ultimate goal was joint market entry. The network was formed to create new business for the organizations involved and thus diversify the maritime industry in Finland. The aim was to make a market entry with a joint product and service package since none of the companies were capable alone of producing a vast offshore structure, for example for exploration or production use, like a drillship or a drilling or production rig. In that sense, the basic idea behind the ultimate goal was resource dependence: all of the network organizations possessed scarce resources that combined together would yield an entity, whose commercial success would potentially benefit all of the network organizations. In the collaboration events during the project, the network organizations did work on a joint product and product entities on several occasions. Additionally, they contemplated their relationships with each other and the competitive situation amongst them. Furthermore, the target markets came under consideration.

In the sixth board meeting, while the first preliminary results of the 3rd interview round were to hand, the Chairman of the Board of Directors commented that *"It is not necessarily a bad result if an outlook has been developed through the networking project that collaboration with other network organizations is not logical and it has been noticed that co-operation takes place in another axis. Strategy after all means that decisions are made according to the outlook."* The project leader agreed and commented that *"it is also groundbreaking if a conclusion can be made that there is no synergy."* The Chairman of the Board of Directors added that *"In this networking project there are so many companies, that it would be virtually impossible that, in a first commercial attempt, each and every one would be included, although that is a fabulous idea."* One offshore sales manager of

Company D felt that *"it would be great if two or even three companies would start collaborating just due to the networking project."* The Managing Director of Company D thought that *"one concrete outcome of the project is the knowledge and understanding of what the others are doing. To me a good result is also that we have a better grasp of the requirements for forming a genuine network, even though this networking project does not become such after all."*

In other words, after two years of collaboration, the realities and difficulties of forming a network had enlightened the network organizations. Moreover, although there were multiple discussions, workshops and visions for the ultimate goal, after three years, no written strategy for achieving the ultimate goal was drawn up in the end.

4.4 Network formation phase: Network as an interaction

In the prior studies of network as an interaction, the extent and evolution of interaction were studied by Human and Provan (2000), and the forms and multitude of network interactions, such as CEO and project group meetings were researched by van Raaij (2006). The empirical data and codes for used the analysis of the status of legitimacy of Network as interaction in Network formation phase are presented in Table 15. The results of the analysis are then elaborated in more detail in the following sub-sections. In this case network, the forms of face-to-face interaction and the extent of participation were researched along with documents produced both internally and externally. The legitimacy building of the interaction in the case network was carried out according to the project plan, leading to both internal and external network interactions.

4.4.1 Internal interaction

The internal interactions within the network took place in various types of events:

- one preparation and seven board meetings
- six workshops, two of which were held with target country customers,
- three rounds of interviews for each network organization, two of them face-to-face and one mainly telephone interviews
- one survey for all network organizations and
- one open final seminar.

Table 15. Empirical data and codes used for analysis legitimation in the network formation phase: Network as interaction

Network formation phase: Network as interaction

Analysis: the internal and external interaction within the network, the plan and resources for interaction participation

- **Interaction with network organizations**
  - § Plans for internal interaction in Project plan
    - § *"Project plan - Aim of the project"*
    - § *"Project plan - Action plan - Strategy work - Study of Product and service supply"*
    - § *"Project plan - Action plan - Study of Networking strategies of NW organizations"*
    - § *"Project plan - Action plan - Network's internal services"*
    - § *"Project plan - Restrictions of public financing"*
  - § Records of participation in Board meeting memos and strategy reports
    - § *"Board meetings – Participants"*
    - § *"Str reports – Participants"*
  - § Strategy reports follow-up of execution of action plan
    - § *"Str reports - Governance of the project"*
    - § *"Str reports - Execution of the action plan"*
- **Interaction with external stakeholders**
  - § Plans for external interaction in Project plan
    - § *"Project plan - Action plan - Customer interface Brazil"*
    - § *"Project plan - Action plan - Customer interface Russia"*
  - § Records of participation and observations in the workshops
    - § *"Customer interface – Brazil – Delegation of Visit to Finland 08-2011"*
    - § *"WS - WS3 - Customer interface Brazil – Participants"*
    - § *"WS - WS4 - Customer interface - Russia - Fin NW Participants"*
    - § *"WS - WS4 - Customer interface - Russia - Rus Participants"*
    - § *"WS - WS4 - Customer interface - Russia - Participants Total"*
  - § Strategy reports follow-up of execution of action plan
    - § *"Str reports - Execution of the action plan - Customer interface – Brazil"*
    - § *"Str reports - Execution of the action plan - Customer interface – Russia"*

One enabling element for the interaction was the public funding, which on the one hand allowed the management and organizing of networking efforts and on the other hand required the organizations to participate and report their participation in order to receive their funding. The interactions were divided into three strategy phases, each of which included various types of events, as listed in Table 16. All of the events also provided research material for this legitimacy study.

Table 16. Network's internal interactions in three strategy phases

1st strategy phase	Preparation meeting
The goal of the phase:	1st Board meeting
	1st Interview round
The network organizations and their product and service offering	1st Workshop
	Report on1st Strategy phase
2nd strategy phase	Survey
The goal of the phase:	2nd Board meeting
	2nd Interview round (telephone)
The capability-building needs and strategy, research strategy building	2nd Workshop
	3rd Workshop with customers (B)
	4th Workshop with customers (R)
	3rd Board meeting
	Report on 2nd Strategy phase
3rd strategy phase	5th Workshop
The goal of the phase:	4th Board meeting
	5th Board meeting
Network strategy building	3rd Interview round
	6th Board meeting
	6th Workshop
	Open final seminar
	7th Board meeting

All the reports and board meeting memoranda were distributed to all network organizations, to their project managers and board members as confidential material via e-mail and the globally used Moodle learning environment. The network's Moodle pages were closed and restricted only to the network organization users. The three reports dealt with the interview and survey, as well as the workshop results of each strategy phase. The workshop was always on a certain topic of the agenda that was derived from the ongoing strategy phase. The final report summed up the three strategy phases, as well as general issues of the project reported to the funder, such as cost accumulations and participation in events during the project. Also, the seven board meetings were covered in conversational memoranda in order for those who were unable to attend to follow the dialogue amongst the network organizations. The agenda in the board meetings included the practical issues of the project and goal setting.

Network organizations have to be motivated and willing to participate in networking. Although there is no domestic market for oil and gas exploration or production in Finland, altogether over 20 of the major Finnish maritime companies were willing to be involved and align themselves together

with other organizations to operate jointly in the offshore business. As the participation of organizations varied during the network project, the participation percentages (Table 17) were calculated based on the number of organizations participating in the network on each occasion.

Table 17. Network organization's participation in network events.

	Network organizations involved (n)	***Network Companies participated***	***Other organi-zations***	***Number of persons** *= customer*	***Participation % (organizations involved at that moment)***
Preliminary meeting	20	12	4	20	60%
1st Board meeting	20	13	3	18	70%
1st Interview	21+ NAO	20		47	95%
1st Workshop	22	15	1	19	68%
Survey	21+NAO	20		20	95%
2nd Board meeting	22	10	1	15	45%
2nd Interview	21+NAO	19		22	90%
2nd Workshop	23	11	2	17	57%
3rd Workshop with customers	22	12	2	17+3+21*	55%
4th Workshop with customers	22	11	3	14+4+11*	50%
3rd Board meeting	22	10	1	14	45%
5th Workshop	22	8	1	12	41%
4th Board meeting	22	7	2	12	32%
5th Board meeting	23	12		13	52%
3rd Interview	24+NAO	22		32	92%
6th Board meeting	25	10	1	15	40%
6th Workshop	25	9		13	40%
7th Board meeting	25	11	2	15	44%

For example, participation in the interviews and surveys was at a high level, each at 90% or over. The average participation altogether was 60%, the median being 63%. In other words, in the case network, the interaction or at least participation in network's interactive events was active. However, when the systematic interaction events stopped after the project, network-level interaction turned into random discussions with smaller groups, which potentially formed sub-networks. However, the capability-building efforts run by the NAO did continue regularly, at least for a period of time after the network project. After the first workshop in the second interview round, the network organizations commented on the workshops (Table 18).

Table 18. Feedback regarding the workshops

Quotes from network organizations regarding the workshops
§ *"The events enable the accumulation of shared knowledge and the discovery of joint possibilities. Therefore it would be beneficial to sit down together every now and then to ponder the different views. Our company does have participants."* - Company B, Marketing Manager
§ *"More workshops should be arranged, since they expand the network of participants as people become acquainted."* - Company F, Managing Director
§ *"We definitely need more of these workshops in order to network and to finalize the business plan for the NWP to genuinely participate in a project. Otherwise the first workshop is just a separate discussion"*- Company C, Director (Service Contracts)
§ *"The discussions amongst the companies are vital in order for the NWP to form a network that could jointly quote for offshore projects. Networking requires collaboration, which demands shared discourse. I felt that the discussion and the output of the different groups in the first workshop was good."* - Company D, Offshore manager
§ *"It is beneficial to have a dialogical connection concerning the issues, for example, regarding joint bidding or Board of managers. Usually, they always yield something good. We have participants when the theme is interesting and moment is suitable. I think that there is a demand for seminars, training and workshops when a situation is on, for example the visit of Brazilians in August."* – Company E, Vice President
§ *"I hope this offshore network develops so that when I require knowledge of something, I would know who to ask. The first workshop was perhaps too high level for me; as a product manager I require more concrete information…"* - Company N, Senior Sales Manager
§ *"Referring to the modus operandi of the Norwegians, the common vision is not created only via e-mails, but the meetings should be carried out face-to-face. In other words, the significance of the workshops is immense. .."* Company L, CEO
§ *"I think that there should be more workshops, otherwise the project is not visible for the companies, and the tendering phase will not proceed without personal relationships…. seminars are a bit boring, but group work is better for networking. On the other hand, in workshops there could be presentations on topical issues."* - Company T, Executive Vice President
§ *"I am willing to participate in workshops, although there might be bickering. I feel that the project does have two types of advantages: firstly it brings visibility abroad and secondly, people get to know each other, which only takes place in workshops."* – Company U, Area Manager
§ *"The aim of the workshops should be a commercial project, and the workshops in the future could be more sectored and the discussion accordingly. According to the sectors of the business plan."* – Company V, Managing Director
§ *"The project should include workshops. In fact, the project should be executed as a series of workshops. For instance the business models that were created in the first workshop should be worked on further in the next ones."* – Company W, Vice President

The informants regarded workshops as a way to execute the project. The workshops were considered as beneficial, particularly for people to get to know each other, expand their personal networks, to share knowledge and have a discourse. Dialogue between companies was seen a method that always yields something positive. The networking was seen as requiring collaboration, which can be carried out in workshops face-to-face. Therefore, the significance of workshops in the

network interaction was considered to be immense. Workshops were also seen as a way to make the project visible for the participating companies. Additionally, the first workshop received good feedback on the discussion and its output. However, many of the informants mentioned that the workshops were a necessary platform for preparing a joint business plan, quotations and tenders; therefore some felt that the workshops should concentrate on the potential commercial projects. Also, as feedback of the project in the third interview round, the workshops were regarded as positive.

"Our Offshore manager was very satisfied with the workshops." – Company D, Managing Director

4.4.2 External interaction with potential customers abroad and with other stakeholders

During June 2010 – December 2012, the network and its actions were presented to Russian organizations on nine various occasions, such as at collaboration group meetings of the maritime industry, exhibitions and fairs, six times in Russia and twice in Finland. Additionally, there were two negotiations with six selected partners (oil companies, shipping company specialized in petroleum shipping and an open stock company that unites various shipbuilding companies) held both in Russia and Finland. Also, universities were contacted in two Finland-Russia university collaboration seminars, one in Russia and one in Finland. Additionally, one workshop was arranged together with the four selected oil company partners and energy ministry representatives to discuss the networked collaboration. In the workshop, there were eleven Russian participants and 14 participants from network organizations, together with one participant from a specialized financing company owned by the State of Finland, i.e. the official Export Credit Agency (ECA) of Finland. The most concrete discussions were carried out in the workshop. The representative of the Energy Ministry commented that:

"These meetings have been advantageous since on Thursday the Russians were able to present their projects in detail and their requirements and on Friday the Finnish companies their product and service offerings. Therefore, there has been a major step forward and now it is time for a short break for the Russians to inform the minister responsible at government level for the concrete projects." - Russian Energy Ministry, representative at Workshop 4

In other words, during the course of the events, the managements of the Russian companies were kept informed, as well as government representatives, which they viewed positively.

Potential Brazilian customers and other counterparts were contacted during August 2010–December 2011 in four trips to Brazil and during two trips by Brazilians to Finland. The network and its actions were presented to Brazilian organizations in six presentations, together with discussions in meetings, seminars, and workshops with 37 different organizations: seven governmental and state organizations, three associations, 18 companies, six universities or research institutions, and three other organizations. Over 44 individual company executives, state and associate representatives, as well as professors, experts and researchers were briefed about this network during these events. Also for the Brazilians, a workshop was arranged with 21 Brazilians and 17 participants from 12 Finnish network organizations, together with three local and governmental organization representatives. In the workshop, the discussion with the Brazilians stayed at a general level and none of the requirements were presented in detail, therefore the gain achieved in the workshop by the Finnish organizations was considered low. Also, collaboration with Brazilian associations was discovered to be challenging, as they pursued the lobbying of their own local industry, therefore they were trying to find individual machine and equipment suppliers to support their industry, rather than a whole network of organizations.

The network project was lobbied for two ministries in Finland, as well as a couple of business federations during both its pre-formation as well as formation phases, along with a collaborative organ of the maritime industry. The network organizations were also involved in research strategy formation for the maritime industry seminar together with other organizations. Additionally, the network project had collaboration with other networking projects, such as an educational project pursuing university-level courses of offshore in Finland and maritime research collaboration of universities in Finland and Brazil. The network project was also introduced and some of its results presented in one maritime seminar.

”In terms of Brazil, their visits have been beneficial, although they have not produced anything concrete.” – Company M, Business Manager

4.5 Network formation phase: Network as an entity

The prior studies by Human and Provan (2000), van Raaij (2006) and Valkokari (2015a) all point out the significance of networks as an entity or recognizable identity development. In their study, Human and Provan (2000) stress the critical role of the lead organization along with creating a

viable-looking network organization, which is attractive to internal members, potential new members and external stakeholders, such as customers and funders. In the study of Valkokari (2015a), the shared identity was studied by examining the shared sense of purpose, membership identification, enthusiasm for collaboration and knowledge sharing. In the case network, the entity was studied by examining the roles of the NAO, key stakeholders - both internal and external - and the project plan in the formation of a shared identity. The empirical data and codes used for the analysis of the status of legitimacy of the Network as interaction in the Network as an entity are presented in Table 19. The results of the analysis are then elaborated in more detail in the following sub-sections.

The legitimacy building of the case network as an entity was two-fold. First of all, there was the identity that was legitimized amongst the network organizations during the three-year networking project, and secondly the identity that they were building for the network after the project, which was carried out according to the strategic plan.

4.5.1 Actions and credibility of the network administrative organization (NAO)

At the network level, the networking project governance was built up by utilizing a small company founded and owned by some of the network organizations. The company was established for capability building and market knowledge services in 2005. Prior to the networking project launch in 2010, the company's business operations with a personnel of 2–3 people had started in 2009 fairly modestly with two introductory courses about offshore oil and gas for interested parties. This company was chosen as the network administrative organization (NAO) by the two key persons of in the beginning, i.e. the project leader, who was responsible for the networking project and manager of local organizational development company. As said, the networking project had a project leader, responsible for the entire project, with a background in the shipbuilding and offshore business, who at first was employed by one of the network organizations, but later on operated as the CEO of the NAO. Additionally, the networking project had a Board of Directors, with a representative from each network organization. The representatives were mainly CEOs (13), vice presidents (2) or business, marketing or area managers, or other experts.

Table 19. Empirical data and codes used for analysis legitimation in the network formation phase: Network as an entity

1. Network formation phase: Network as an entity

Analysis: The network entity by examining the roles of the NAO, key stakeholders - both internal and external - and the project plan in the formation of a shared identity.

- **Actions and credibility of the network administrative organization (NAO)**
  - § Discussions with project leader
  - § NAO documents: *"NAO - goal and purpose"; "NAO – partners", "Project application"*
  - § Strategy reports: *"Str reports - Governance of the project"*
  - § Board meeting memos: *"Board meetings - Tasks of executive board"; "Board meetings – Participants"*
- **Role of key stakeholders**
  - **Internal**: Project leader, Manager of local organizational development company, Board of Directors, Project manager for NAO
    - § Discussions with project leader
    - § Tasks and participation reported in Board meeting memos: *"Board meetings - Tasks of executive board"; "Board meetings – Participants"*
    - § Participation reported in Strategy reports *"Str reports – Participants"*
    - § Prerequisites of participation for receiving public funding defined in Public funding grant instructions: *"Public funding - terms - scope of funding"*
  - **External** : State's funding company, customers and other contact forums in potential market countries
    - § Public funding terms: *"Public funding - terms - scope of funding"*
    - § Observations of participation and following action plan in the workshops reported in Workshop memos and Strategy reports: *"WS - WS3 - Customer interface Brazil – Participants"; "WS - WS4 - Customer interface - Russia - Rus Participants"; "Str reports - Execution of the action plan - Customer interface – Brazil"; "Str reports - Execution of the action plan - Customer interface – Russia"*
    - § Potential customers' interest towards Finnish NW approach: *"WS - WS4 - Customer interface - Russia - Rus plans and interest in Fin NW"; Customer interface - Brazil - Meetings in Brazil - Plans and views on Fin NW*
- **Entity building according to the project plan**
  - § Strategy building according to Project plan
    - § *"Project plan - Aim of the project"*
    - § *"Project plan - Capability building strategy"*
    - § *"Project plan - Customer interface"*
    - § *"Project plan - Restrictions of public financing"*
    - § *"Project plan - Action plan - Strategy work - Study of Product and service supply"*
    - § *"Project plan - Action plan - Capability building strategy*
    - § *"Project plan - Action plan - Study of networking strategies of NW organizations"*
    - § *"Project plan - Action plan - Network's internal services*
    - § *"Project plan - Action plan - Customer interface Brazil"*
    - § *"Project plan - Action plan - Customer interface Russia"*
    - § *"Project plan - Action plan - Links to other projects"*

Most of the CEOs also participated in the network operations, such as interviews and board meetings themselves; a few also had a deputy in some cases. When the operations of the networking project started for real at the beginning of 2011, the NAO hired a project manager with a background in

industrial engineering, networking projects, research and teaching, who is the author of this thesis. Although the title was project manager, the job description consisted of research and education planning and execution related tasks within the NAO. As project manager in the networking project, her duties were to carry out the study aspects of the project, such as interviews, surveys and workshops predetermined according to the project plan and instructions of the project leader. Along with data gathering, data analysis and reporting to the network participants was also her responsiblitity in the networking project. As the networking project was partly public funded, collecting information from the network organizations and reporting the project's finances and operations collectively to the funder was also part of her tasks. After one year, in 2011, the project manager also took on another project regarding a capability building related collaboration project with a technical university to manage under the NAO, so thereafter her input for the networking project was mainly part-time. Therefore, the tasks of the project manager did not include strategy building or decision making for the project, which were carried out by the project leader in collaboration with the Board of Directors, with a representative from each network organization.

In addition, when the network project operations started in 2011, the NAO had a total of five employees, with the four other employees working on information services and courses, thus laying the foundation for knowledge network building. Therefore, there were no particular difficulties in the organization of the network project with an NAO and Board of Directors; the network organization could be viewed as a viable administrative entity that had a recognizable form for promoting the network concept while managing the network activities and growth. The more detailed feedback from the network organizations also regarding the NAO in the networking project is presented in sub-section "4.6.1 Feedback on the project".

4.5.2 Role of key stakeholders

Both internal and external key stakeholders had an impact on the network's formation and function as an entity. Table 20 lists the main contributions of each key stakeholder.

There were three main internal stakeholders: the project leader, the manager of the local organizational development company and the participating organizations. As mentioned earlier in the pre-networking phase, the project leader was another person, who originated the idea of the network and contributed heavily to the network's project strategy and project plan content, contacted the network organizations as well as applying for the public funding.

Table 20. Role of key stakeholders in the network as an entity

Internal or external stakeholders	***Stakeholder***	***Actions***
Internal	Project leader, responsible for the project	- Idea originator - Contributor to strategy and project plan content - Leader - CEO of NAO - From inside the industry with long experience in the target markets - Well known, well networked - Active participation and collaboration
	Manager of local organizational development company responsible for the maritime industry	- Solicits participation of network members - Contributor to project plan content - Contributor to public funding - Participated in some of the activities
	Participating organizations	- Active level of participation (see "Network as an interaction") - Six new organizations joined the network after the start of activities in 2010
External	National funding company	- Accepted and monitored the progress of the expenses and activities of the project plan - Funding placed strict restrictions on project activities and nature (no commercial activities were allowed)
	Customers and other contact forums in the potential market countries	- Both target market counterparts regarded the idea of networked organizing as an interesting one - Potential ways to proceed with the networked type of action were discovered: 1) pursuing a knowledge network or consortium archetype supply network, 2) establishing a presence in target countries amongst the local industry - Interaction between the customers is described in "Network as an interaction" section

From November 2012, this person also started working as the CEO of the NAO. He came from inside the industry, with four decades of experience in ship design, as well as the offshore oil and gas business. He was very well known and networked within the industry, both domestically and internationally, and had experience with the target markets, especially Russia, where the network aimed at market entry. He participated very actively in every networking activity during the network project and collaborated actively with other projects that the networking project co-operated with. The manager of the local organizational development company contributed to the pre-formation phase by inviting people to become network members, contributing to the project plan as well as the public funding application together with the project leader. During the project, he participated in six networking activities, but in the formation phase, his contribution was more at the level of

information exchange. All the network organizations participated very actively, which is described in more detail in the section “Network as an interaction”. Six new organizations joined the network after the activities started in 2010.

In addition to the internal stakeholders, there were also two external stakeholders: the national funding company and potential customers in the target market countries. The funding company accepted the project plan and also monitored the progress regarding both the expenses and activities of each networking organization with six intermediary reports and one final report. The funding placed strict restrictions on the network project activities and the nature of the project was to be an analysis of the network and its capabilities with no commercial activities allowed. Additionally, both the target market countries and potential customers and other partners were contacted during the project and the interaction between the customers is described in the section “Network as an interaction”. As mentioned earlier, in all of these events the Russian counterparts regarded the idea of networked organizing as an interesting one. However, they mentioned that in order to implement the networked type of action, a concrete target project should exist. Unfortunately, no concrete target project was discovered in any of the events, where the networked type of action could be launched. One participant explained the difficulty in discussing networked organizing on a general level:

“The end product selection is missing, which makes it more difficult, as we cannot identify the customer field. It [the dicussion] would be easier if we had an end product to discuss.” – Company A, CEO

In any case, three potential ways to proceed with the networked type of action were identified: 1) through a united shipbuilding company, 2) dialogue with research and development institutes, although obtaining a commercial case through them was considered unrealistic and 3) the industrial parks that were under construction in Russia. One of the network organization participants brought up the how the networking project had developed a brand-like identity within the Russian counterparts:

“Within the Russian parties during the network project, the Finnish network had become a concept, a sort of brand for a networked type of operations, about which the ministries are also informed.”– Company A, CEO

As mentioned before, in Brazil the idea of a network type of action was considered interesting. To them, the problem in network collaboration lay in practical issues, e.g. with contracts. Additionally,

during discussions with both companies and governmental officials in Brazil, it became clear that establishing a network in a geographically large country where there is a demand for local content and presence is challenging. All the areas have their own benefits and disadvantages: low wages are available in areas with underdeveloped infrastructure, while, in contrast, with a well-developed infrastructure come high labour costs. Labour costs sometimes also correlate with education level, sometimes also with security issues. In the first place, the network should either have a joint product that would be produced in the country, or there should not be local content requirements for the product. To start the collaboration, the research institutes of large companies as well as universities were seen as beneficial target organizations. Additionally, partnering with local companies was considered advantageous.

"[Company 5] is a large, slow company to welcome new ideas. Therefore, with new ideas one should approach their research institute." – Company Eb, CEO

To sum up, the potential ways to proceed with the networked type of action identified in both of the target countries through discussions with potential customers and other stakeholders were two-fold. First of all, was the pursuit of a knowledge network or consortium archetype of supply networks (Pathak et al., 2014) with the collaboration of research institutes and universities in order to transfer and develop new knowledge amongst the countries and possibly also to carry out collaborative R&D. The other was to establish a presence in the target countries amongst the local industry, either by starting a joint venture business or situating the company, or network, in a local industrial park.

4.5.3 Entity building according to the project plan

The identity of the network and its potential future identity were built and determined according to the project plan. The tasks of the project plan were compiled by the NAO and carried out in collaboration with network organizations. The project plan had several topics, whereby the networking project was divided into three phases including both internal and external legitimacy building, see Table 21.

According to the network identity that was created following the project plan; firstly, there was the legitimation of the "network as an entity" that was built amongst the network organizations during the three-year networking project; secondly, there was the identity that the organizations were building for the network after the project, which was to be carried out in accordance with the jointly created strategic plans.

Table 21. Goals of each strategy phase according to the network project plan and their orientation of legitimacy building

Strategy phase	***Goals of each strategy phase (I = internal legitimacy building, E = external legitimacy building)***	***I***	***E***
1st strategy phase	To analyse and clarify		
	- the network's product and service offerings and specialties	I	
	- potential competition within the network	I	
	- the potentiality for operating as a lead organization	I	
	- current customer groups in the supply chain and visions for potential customer groups	I	
	- current operations and future visions and establishment plans in the offshore business and target countries	I	
	According to the clarified issues, to		
	- envision the potential joint offering and strategies in the target country markets	I	
	- envision and evaluate the potential governance form of the network	I	
	- receive feedback from the customer side regarding the networked type of action		E
2nd strategy phase	To analyse and clarify the capability-building needs for new markets	I	
	According to the clarified issues, to create a joint capability-building strategy for the network.	I	
	Start collaboration with potential customer groups in target countries.		E
3rd strategy phase	To analyse and clarify		
	- the network organization's views on networking within their organization and their views on the aims and gains of the network project	I	
	- the research needs for new markets	I	
	According to the clarified issues, to create a joint research strategy for the network and the Finnish offshore industry in collaboration with other Finnish offshore organizations and integrate it as part of the strategy of the Finnish marine industry.	I	E

The goals oriented towards internal legitimacy building signified and encompassed activities amongst the network organizations, such as analysing and clarifying the products and services the network could jointly deliver, the capability building needs in order to be prepared for the joint delivery, and networking strategies. Thus these actions, when viewed from legitimacy-building strategy viewpoint, the aim is build the legitimacy inside-out. In addition, the goals oriented towards external legitimacy building stand for and include activitities with external stakeholders, such as potential customers. Thus these actions, when viewed from legitimacy-building strategy point of view, the objective is to build the legitimacy with the outside-in orientation. In this case the activities contain both inside-out and outside-in legitimacy-building strategy orientations.

4.6 End results of the networking efforts: successes and dissolution

After the three-year project, the end result of the network and its legitimacy building was researched by collecting feedback from the network organizations regarding their perceptions of the network project and its achievements. Additionally, the final situation was observed. The empirical data and codes used for the analysis of the end result of the networking efforts is presented in Table 22. The results of the analysis are then elaborated in more detail in the following sub-sections.

Table 22. Empirical data and codes used for the analysis of the end results of the networking efforts

End results of the networking efforts
Analysis: End results of the networking efforts
- Feedback of the project from the network participants § 3rd interview round: § *"NWP goal achievement"* § *"NWP goal achievement - gains exceeding the original plans"* § *"NWP goal achievement - lack of gains"* § *"NWP goal achievement of the company"* § *"NWP goal achievement of the company - achievements exceeding the original plans"* *"NWP goal achievement of the company - lack of goals"* § Strategy reports: § *"Str reports - Feedback from the NWP participants"* § Observation of 6th workshop and final board meeting reported in Board meeting memo and Strategy reports: § *"Str reports - WS results - New product development for NW"* § *"Str reports - WS results - Business model for Joint NW Product"* § *"Str reports – Conclusions"* § *"Board meetings - Action plan - Feedback from the NW orgs"* § *"Board meetings - Action plan - next projects"* § *"Board meetings - Action plan - next steps"*

4.6.1 Feedback on the project

In their feedback after the three-year project, the network organizations viewed the project as positive in general. When they rated the project on a scale of 1 (bad) to 10 (excellent), the scores were between 4.5 and 9, with an average of 7.04 (n=11). Not all of the interviewees wanted to give any specific score, but they gave verbal feedback. The positive feedback quotes are presented in Table 23, neutral in Table 24 and negative feedback quotes in Table 25.

Table 23. Positive feedback on the networking project from the network organizations

Quotes of positive feedback on the networking project
New contacts and joint collaboration, learning what others do and clarifying the boundaries of the network, personal chemistry, commercial view and foundations for other projects
§ *"I did not expect anything, learning how to collaborate perhaps. I don't think there has been any great change, but we have collaborated more with Company D. It might be, to some extent, that networking is wave-like: when there are people with whom the personal chemistry works, you will collaborate. A project may help you to find those people with whom collaboration is nice. Common interest can be found once the personal chemistry is working." – Company U, Area Manager*
§ *"With the project we have also achieved new partners for collaboration."*– Company D, Managing Director.
§ *"From our company's viewpoint, the launch of the model has portrayed and highlighted the network of the networking project.… With the project, the boundaries (of the network) have been found". –* Company A, CEO
§ *"We have pretty well mapped what is going on in this country."* – Company C, Director (Service Contracts)
§ *"We have learned the players in this field and contacts with companies have been good. The project has yielded networking."* – Company I, Project Manager
§ *"The project has measured up to our expectations in that we participated in order to see where the industry is going, we have sat in and thus it has happened. We have seen who are the Finnish players and where they operate. We have not had any business; however some contacts that might materialize at some point. In the background was the idea that the Finnish network would bring about new partners for collaboration.*" – Company J, CEO
§ *"We have been satisfied with the ideas and network building per se, also capacity has been found nicely."*– Company Q, Sales Manager
§ *"The networking project has served [our purposes] in the sense that it will yield network companies, which can create their own new things and add value, which to them is the justification of their existence. Although [our end product] is different, the focal players are the same companies, which becomes visual in the procurement. This is because they can give the best quotations, which seems to be based on the fact that they can also share resources with each other. When the structure is the same, there is a distinct learning curve, and that fortifies the significance of the network economy". –* Company T, Executive Vice President
§ *"Networking in Finland has progressed, not abroad though."* – Company N, Product Manager
§ "*Compared to other publicly funded projects, this networking project has had more commercial intent. We think that this project may lay the foundations for other public development projects and when the readiness is found, potentially also for commercial projects."* – Company D, Managing Director

Table 23. Positive feedback on the networking project from the network organizations (continued)

Quotes of positive feedback on the networking project
The project itself systematically carried out by NAO, especially the collaborative workshops
§ *"The project itself has been systematically carried out. Networking projects are challenging, especially with the Finnish mentality."* – Company E, Senior Vice President 1
§ *"Our Offshore manager was very satisfied with the workshops."* – Company D, Managing Director
Common capability-building strategy with the training system and market knowledge service
§ *"We have utilized the capability building to some extent. The training has received positive feedback…"* – Company C, Director (Service Contracts)
§ *"Our goals for the networking project can be divided into two main axes: First being the capability building and interaction, which have worked well. Without the networking project the level of training and communication would not necessarily have been reached. And as providing the training is part of the NAO's work, creating the joint capability building strategy is part of the networking project. Also sharing knowledge was one of the main ideas of the networking project. Compared to other publicly funded projects, this networking project has had much more drive towards the commercial direction."* – Company D, Managing Director
§ *"It has been excellent that the capability building has kicked off. The networking itself has started in such a manner that there has been more talk than subjects or action. As a company, we have been one of the initiating companies. The network is a bit scattered and another thing is that some of the participants in Finland are competitors; therefore, they are a bit cautious. The Finnish companies have the potential to make large packages, but the competing situation is a bit difficult. The R&D has currently not proceeded at an adequate pace."* – Company H, Director (Sales and Marketing)
§ *"The training has been great, thus we have found the context, as the modus operandi is different than in cruise & ferry.*." – Company K, Director
§ *"Our expectations were not high. However, we did have more expectations for the training. The training part has been more successful than the (commercial) project achievement"*. – Company R, Executive Vice President
§ *"The capability building was a goal, which has succeeded. We have used the training sessions and they have been good. Was there directly even a goal that we would have a real commercial project? However, we have pondered modes of operation and models, but no launch has occurred. We have thought of the product mapping as a mental exercise, but the idea that a consortium would have such large projects is highly unlikely… with packages we could collaborate. In this networking project, practically all of our competitors are involved… However, collaboration is the way to do business today, which we will proceed with as long as there is a common interest, and when the situation is more competition, then we will compete. This project has not been at a concrete level, thus the competing situation has not prevented (the collaboration)."* – Company S, Managing Director
§ *"Capability building and contract models.*"– Company E, Senior Vice President 1
§ *"Capability building and trainings."*– Company M, Business Manager

Table 23. Positive feedback on the networking project from the network organizations (continued)

Quotes of positive feedback on the networking project
Work at the customer interface and brand image
§ *"There has been more political 'torque' yielded, for instance towards Russia and Brazil".*– Company W, Vice President
§ *"In terms of Brazil, their visits have been beneficial, although they have not produced anything concrete."* – Company M, Business Manager
§ *"We have to give credit to the networking project since now the project is a concept in the Russia oil and gas working group and in the ministries they are forwarding information that the network exists."*– Company A, CEO
§ *"We have learned new things regarding Russia. Brazil is not our primary expanding area."* - Company I, Project Manager
§ *"As a company we have been involved in the Russian 'circle', therefore we have some visibility in the markets. The idea of penetrating the Brazilian markets has strengthened."*– Company V, Managing Director
Being part of and interacting in the Finnish cluster and discussing networking
§ *"We want to be part of the network and bring to the Finnish cluster extra strength and feedback for our own company."*– Company B
§ *"We want to promote Finnish-Russian collaboration in the name of [various] services."* – Company I, Project Manager
§ *"Our goal is to upgrade our company's profile in offshore."*– Company N, Product Manager
§ *"We have got what we have aimed for: discussion and visibility. From our company's viewpoint, this project has sparked conversation and that is why we have participated."*– Company V, Managing Director
§ *"The goals of company T have been connected to offshore… The gains have been that the discussions on networked economy and its modus operandi in various forms have continued. Having this discourse is a focal theme, which this networking project serves."* – Company T, Executive Vice President

In the positive comments of Table 23, the project had advanced networking and clarified the members of the network. Many felt that they had learned about the other companies working in the field and also made new contacts. The project itself was perceived as having been systematically carried out and especially the collaborative workshops were praised. Therefore, the NAO was successful in its operations. However, the companies' expectations of the networking project varied a lot. Some participated in order to monitor the situation, whereas some had been aiming for a faster and better commercial end result via networking since for some companies, offshore is an important

business area. The different goal levels also affected the activity level in the networking project: some had been moderately active and thus had not received such tangible outcomes.

However, networking both at personal and organizational level had been the goal for many and it had been perceived as important, since without networking within the offshore business area, an individual company would not stand a chance of being involved in large offshore projects. Some companies reported that new joint collaboration had started within the network companies during the project and the networking project had contributed positively to that. Especially, the created common capability-building strategy with the training system and market knowledge service received positive feedback and highlighted those capability areas that required most improvement. In fact, in the final interview, eight of the organizations claimed that starting the joint training was the most successful outcome of the networking project for their organization. There was also positive feedback regarding the work at the customer interface. The meetings with the Brazilians were perceived as positive, although they did not lead to any business. However, the network brand image was deemed a great success as it reached beyond the original strategic plan of the networking project. The network brand image was attained particularly among the Oil and Gas Working Group under the Finnish-Russian Intergovernmental Commission for Economic Co-operation and the Russians found the networked approach of the Finns an interesting one. In the neutral comments of Table 24, some of the organizations viewed that the position had not changed tremendously during the project. Despite that, they felt that the project was a good endeavour.

Table 24. Neutral feedback on the networking project from the network organizations

Quotes of neutral feedback on the networking project
Neutral views on the network project's success
§ *"Our position without the networking project, perhaps we would be in the same situation as now. There have not been any primary benefits, yet no harm either. In the big picture there is a cluster and we are a part of it… And when this issue has been advanced, the Finnish clustering is not as strong as it could be… To sum it up: the networking project has not caused any new strategic position, but on the other hand there has not been any harm either. A good project as it stands. We have not received any new contacts in Finland. We already had our portfolio beforehand, and those partnerships that have emerged, have emerged business-based."* – Company X, CEO 2
§ *"I cannot say that anything comes to mind that has not been achieved. In that sense, the goals have mainly been achieved so there are no clear deficiencies."*–Company S, Managing Director

Nevertheless, without any commercial transaction, most of the companies felt the results of the networking project were hypothetical (Table 25). Almost every interviewee revealed that, for them, the networking project did not attain anything concrete. They felt that the network did not operate as a network, that the project stayed at the strategic level, without concrete cases. The discussions were considered unrealistic, although the discourse with the Russians was appreciated. The reasons for the perceived lack of concrete outcomes were the lack of communication from the customer side and the lack of customers to communicate with.

Table 25. Critical comments on the networking project from the network organizations

Quotes of critical feedback on the networking project
Without any commercial transaction, the results of the networking project were hypothetical, i.e. did not attain anything concrete, but stayed at the strategic level
§ *"We hoped for more concreteness. In other words what are the concrete cases and those have been missed. The project has been at a strategic level, but it is not completely due to the networking project, because there should also be the counterpart."* – Company B
§ *"It has been more at the strategic level"* – Company B, Marketing Manager
§ *"[Lacking has been] running the concrete issues, since it has been more follow-up".* - Company F, Managing Director
§ *"Regarding the networking strategy, we think that concreteness has not been achieved, although there have been workshops about it."* – Company D, Managing Director
§ *"The goal has been unclear all the time – at least to me. We are trying to create a network, but so what. What should we really do? Should there be a network that would bring an offshore project to Finland?"* – Company N, Product Manager
§ *"Concreteness has not been achieved, which would be difficult. The discussions could have been somewhat more realistic." – Company Q, Sales Manager*
The end product and project were missing
§ *"The end product selection is missing, which makes the issue more difficult, since the clientele cannot be identified. It would be easier if there were an end product to discuss. With the networking project the companies should become so familiar with each other that they could kick off a joint assignment*."– Company A
§ *"The concept systems did not work out, neither did the product supply. One could ask who would be the system integrator, since companies R, W and B are integrators and thus would compete against each other. Therefore, the project and target were left missing*."– Company R, Executive Vice President
§ *"[Missing were] The application, product and synergy. The synergy levels were not discovered. When the target is missing, everything else is diminished. When discovering the target, some sort of study of the missing things [machinery or equipment] should be carried out."* – Company V, Managing Director

Table 25. Critical comments on the networking project from the network organizations (continued)

Quotes of negative feedback on the networking project
§ *"Our goal was partly that if there is a joint network product, we would be included in it. Since the end product is not ready, we are just hanging around, but I don't think it will be ordered. Perhaps we did not achieve the targets in that sense."* – Company M, Business Manager
Operation as a network
§ *"Personally, I expected that there would have been a team of domestic players, which would have tendered as a unified front. Now the unified front did not arise."*– Company H, Director (Sales and Marketing)
§ *"The Finnish clustering is not as strong as it could be."*– Company X, CEO 2
§ *"One restricting issue is the anti-trust laws, or that your personnel will change firms."* – Company U, Area Manager
Reasons for lacking concreteness - The opposite side and the network companies themselves
§ *"With Russians, we have had a debate, which is the level we have achieved… The counterpart may also be to blame for the lack of concreteness."* – Company Q, Sales Manager
§ *"If something has not been gained, it has also been depending on oneself too"* – Company E, Senior Vice President 2
§ *"[The lacking of concreteness] is due to the participating companies themselves, since we think that finding the concrete cases is their duty, because public funded projects cannot include commercial actions. The reason why the concreteness has been lacking is the desire of the companies to take a passive, observing role. There are potential commercial projects fitting for the network, but the challenge is executing them in the market economy, particularly in Finland, especially when the focus is on the Finnish offshore industry."* – Company D
§ *Our goals were small concerning the networking project, in other words we wanted to follow what is going on. Therefore, not so much seeking business openings. Our humble goals are thus accomplished. We have pretty well mapped what is going on in this country. It could have been better, had we had more time to focus.*– Company C, Director (Service Contracts)
§ *"70 % of [lacking the gains] is due to the quite narrow participation of our company, which has not been particularly broad. Our teams are cross-geographic, thus this type of action is difficult to put into practice."* - Company W
§ *One can always go in front of the mirror and ask could you do more yourself. However, the resources are small."*– Company X, CEO 2
Expected feedback on the needs of other companies not received
§ *"We have not received feedback on what the other companies would require from us, what types of services or products."* - Company I, Project Manager
§ *"We have not received information on what position we would have particularly as a Finnish [..]supplier, which is our basic thing. The network needs it and in the background is the fact that it in the old days [this product] has been an issue that elevates and ensures the total quality."*– Company Q, Sales Manager

The interviewees considered the mapping of the product and service offering to be beneficial, at least for identification of potential customers, yet they thought that when the joint end product was undetermined, there was nothing to discuss with the potential customer. However, they did acknowledge that the lack of concrete outcomes was also due to the network organizations themselves, firstly, since the commercial ventures are missions for corporations, not publicly financed projects, and secondly, since some of the organizations adopted the role of observer, not actor.

Regarding the role of public funding in future networking, the network organizations had divergent views. Only two organizations had a positive view on public funding: one thought that it had a great impact, whereas the other was less enthusiastic, saying that public funding was only one possibility. Four of the organizations viewed public funding as having no relevance whatsoever and two of them did not want to put any effort into applying for it or the bureaucracy that public funding requires. Furthermore, ten of the organizations viewed public funding as beneficial, yet not indispensable: they did not have a threshold to participating, they felt that supporting funds were always good to have, but that having public funds should not steer the decision making of the network. Also, they pointed out that a lot depended on the flourishing of the business: when the income comes from the customer, there is no need for public funding and only viable parts of the network remain with those companies that are also willing to carry some risk themselves.

In summary, the positive feedback of the networking effort was equivalent to the strategic goals of the three-year networking project: the capability-building strategy was well formulated and implemented. However, the negative feedback concerned the ultimate goal of the network: joint market entry. The joint market entry with its commercial goal remained abstract for the network organizations. Additionally, as no written strategy for the joint market entry was ever created, it can be interpreted that this lack may have contributed to the outlook of the organization, since the commercial goals remained abstract.

4.6.2 The success and dissolution of the network with involved contingencies

During the three-year networking project, the network was run by the NAO and concentrated on producing information on the network and strategy building via interaction without any commercial collaboration. In the end, the network project did carry out all the tasks that were assigned in the project plan. Therefore, the three-year networking project can be regarded as successful.

Nevertheless, after the three-year networking project, the ultimate goal of the network, a joint commercial market entry, did not materialize, and the strategy for market entry by the entity was not even made. One of the reasons for the absence of the market entry strategy was that the NAO was not a financially credible lead organization for a large project, and as envisioned, the lead should have been taken by an existing or future organization. Another reason was that the network organizations together could not create a common agenda for the project or joint product to pursue: there were too many scattered ideas, which the network as an entity could not commit to, although some of these ideas might be implemented among sub-clusters later on. Therefore, regarding the ultimate goal, the network can be considered as unachievable. However, as the network strategy focused on capability building and the strategy was formulated and implemented successfully, the NAO continued to carry out the capability-building tasks as a service provider by arranging training and market information for the network organizations, as well as collaborating with universities, thus composing a knowledge network. Therefore, the NAO's actions can also be regarded as successful. The early growth of the network did not occur at all, according to the network legitimacy phases (Human and Provan, 2000).

When the process of legitimacy building within this whole network is viewed as an entity, multiple main contingencies that affected the process and end result can be detected and summarized as follows:

- **Industry**: Industry's experience in networking and industry structure
- **Public funding**: Role of public funding as enabler for network interaction and barrier for commercial action
- **Network and network organizations:**
    - The ultimate reason for networking of joint supply of products and services
    - Interest in networking and interaction internally and with external stakeholders
    - Networking as part of strategy or at least in operations of network organizations
    - Network structure and governance: NAO, Board of Directors with participation of all network organizations, competitors and their collaboration strategies
    - Capability-building and inter-organizational learning view
- **Key stakeholders' active role**
- **Outcomes**: conflicting views on the network's achieved and unattainable goals

5 Discussion

The main goals of this chapter are to summarize the results of the study and reflect the findings against the theoretical background of the study. The study aimed to understand legitimacy building, particularly in the pre-networking and formation phases, as well as the contingencies affecting the end result of the network legitimacy, of an intentionally developed inter-organizational whole supply network in a single network case. This chapter is therefore divided into different sub-sections to address these issues.

The first main research question addressed the means legitimacy is built during the formation of a whole supply network by the network actors. The aim was to understand how network actors build legitimacy during the formation of a whole supply network. The first main research question to address these issues was formulated in the following manner:

RQ1: How do network actors build legitimacy during the formation of a whole supply network?

RQ1 is answered with the help of three sub-questions. These sub-questions are discussed in the two sub-sections of 5.1, entitled “Manifestation of pre-network phase legitimacy-building dimensions”, and in 5.2 “Manifestation of formation phase legitimacy-building dimensions and supply network archetype”, which answers the research sub-questions RQ1a, RQ1b and RQ1c. Sub-section 5.2. is divided into four sub-sections, i.e. 5.2.1 The network as a form, 5.2.2 The network as a strategic intent, 5.2.4 The network as an interaction, and 5.2.5 The network as an entity, corresponding to the legitimacy-building dimensions of a whole network during its formation phase. However, in between sub-sections 5.2.2 and 5.2.4, there is a sub-section, 5.2.3, entitled “Supply network archetypes”, which addresses the types of network archetypes that the whole network under study exemplified. This sub-section 5.2.3 also answers research sub-question RQ1c. The reason for this chosen unorthodox representation of the network archetypes in between the portrayal of the four dimensions of the whole network formation phase is that, after categorization of the case network into certain archetypes, the network interaction and entity are easier to explain with the correct archetype concepts. However, the categorization of the archetypes would be difficult to do without the illustration of the network form and its strategic intents. Hence, all four dimensions of whole network formation are intertwined with each other.

5.1 Manifestation of pre-network phase legitimacy-building dimensions

The first research sub-question focused on the the pre-network phase in a whole supply network. The pre-network phase included the three legitimacy-building dimensions: the pre-network climate for co-operation, the legitimacy of the industry, and the existence of preliminary support by potential key stakeholders. The aim was to understand the circumstances of network legitimacy building that were present prior to the actual network formation phase in the case network, reviewed through the three pre-network dimensions presented in the theoretical framework. The first research sub-question to address these issues was initially formulated in the following manner:

RQ1a: How are the legitimacy-building dimensions of the pre-network phase (the climate for co-operation, the legitimacy of industry and the existence of preliminary support by potential key stakeholders) manifested in the legitimacy building of a whole supply network during its formation?

Regarding the legitimacy building of co-operation in the pre-network field, firstly, the results revealed that the pre-network ties were multiple and multiplex both at organizational and individual level. Secondly, pre-network involvement was legitimized throughout the network and use of inter-organizational cooperation seemed to have overall legitimacy as a competitive strategy. Altogether, this signifies that the pre-network climate for co-operation existed and that cooperation in the pre-network organizational field had already been legitimized. Considering the legitimization of the industry, i.e. the interest of the state and public funding in the pre-network organizational field, the results revealed that both the interest of the state and public funding showed that the situation was already legitimized. In relation to the preliminary support for the network among the potential key stakeholders, the results showed that the two key stakeholders were involved and committed. Also, the overall legitimacy strategy of the two key stakeholders included both inside-out and outside-in views, i.e. their outlook on legitimacy building encompassed both collaborations with network members and external stakeholders, such as funding bodies and potential customers. Therefore, preliminary support by potential key stakeholders existed. All in all, the results of the pre-network phase in the case network according to the three dimensions of pre-network legitimacy building showed a network with a high level of legitimacy prior to the formation: a) the pre-network climate for co-operation and b) the legitimacy of the industry were both at a good level, i.e. strong, and c) the existence of preliminary support by potential key stakeholders included both inside-out and outside-in views.

On the basis of these results, a significant finding considering network legitimacy building in the pre-network phase of this case network can be presented. When compared to the previous studies of network legitimacy building by (Human and Provan, 2000), in both cases the pre-network climate for co-operation was weak, the legitimacy of the industry was weak in Alphanet and strong in Betanet, and the existence of preliminary support by potential key stakeholders in Alphanet was only with internal strategies and in Betanet only with external strategies. Therefore, the case network situation in this study is completely different from the previous studies of the pre-network phase. With all of the three critical issues strong for network legitimacy building in the pre-network situation of this case network, this network case contributes new information on whole network legitimacy formation in a completely unexplored pre-network situation.

To conclude, this case network where all three dimensions of pre-network phase were strong, thus creating a foundation for successful legitimacy building, differs from previous studies of network legitimacy building.

5.2 Manifestation of formation phase legitimacy-building dimensions and supply network archetype

The second research sub-question focused on the network formation phase of the network legitimacy building in a whole supply network. The formation phase included four legitimacy-building dimensions: the network as a form, the network as a strategic intent, the network as an interaction, and the network as an entity. The aim was to comprehend how the four legitimacy-building dimensions presented in the theoretical framework of network legitimacy building in the network formation phase were manifested in the case network. The second research sub-question to address these issues was initially formulated in the following manner:

RQ1b: How are the four legitimacy-building dimensions (the network as a form, the network as a strategic intent, the network as an interaction and the network as an entity) manifested in the legitimacy building of a whole supply network during its formation?

This second research sub-question is addressed in the following four sub-sections of 5.2.1 Network as a form, 5.2.2 Network as a strategic intent, 5.2.4 Network as an interaction, and 5.2.5 Network as an entity, corresponding the legitimacy-building dimensions of whole network in its formation phase. Furthermore, in between the sub-sections 5.2.2 and 5.2.4, there is a sub-section of 5.2.3

Supply network archetype, which addresses the types of network archetypes this whole network under study exemplified. This sub-section 5.2.3 also answers the third sub-question, which was formulated initially as follows:

RQ1c: Which supply network archetype or types are identified when the network legitimacy dimensions of the network as a form and the network as a strategic intent are viewed via the supply network typology of Pathak et al. (2014)?

5.2.1 The network as a form

The dimension of the network as a form was manifested both internally and externally. It was manifested internally in the case network, thus revealing it as a whole supply network, through the rationale for its existence, the mechanisms whereby the membership was formed, the type of collaboration they aimed at, the ways the network was governed during the project, the experiences the network organizations had of network leadership and inter-organizational collaboration, also internationally, and how the networking was part of their organizational strategies. The dimension of the network as a form was manifested externally in the case network with the interest shown by external stakeholders, such as funding bodies and potential customers.

The reason for the networking was the ultimate goal of joint entry to the overseas market for offshore structures, which none of the network organizations could achieve alone. In consequence, these organizations did not have a collective contract or any joint assets; this inter-organizational collaboration is considered a network, not, for instance, an alliance. However, inside the network, there was an alliance: the NAO was jointly owned by some of the case network organizations, although there were other shareholders, too. The NAO offered its services network-wide and also to other organizations. Regarding the case network's membership, the network had flexible boundaries, i.e. the member organizations were known at all times during the three-year networking project, although interested organizations were included if they were willing to pay a participation fee and participate in interactions. The network included many types of organization with offerings throughout the offshore supply chain, i.e. joint offering was possible and no major potential structural parts were missing. However, several tasks of the organizations overlapped, causing potential competition within the network and also potential problems, since some of the organizations had different strategies, e.g. non-collaborative strategies regarding collaboration with competitors. Besides direct competition, the network structure also revealed that in some cases there were an only small number of participants tendering, which may have led to monopoly problems

and opportunism, in some cases to preference issues and even conflicting interests of corporations and their subsidiaries. Many of the organizations were accustomed to partnering, some even with competitors, and many acting as a focal company at least within their sub-network. There was even a potential contractor within the network organizations. Most of the network organizations were also doing business in global markets and many of them were present in the target market countries, albeit with varying methods i.e. via parent companies, representatives, joint ventures, subcontractors, subsidiaries or their combinations, thus the organizations had inter-organizational relations for other companies to benefit and learn from. Networking was also part of the network organizations' strategy, if not in their written strategy, at least as part of their operations. Therefore the important legitimacy of the network concept or network as a form was very well established internally in the case network at the organizational level from the beginning of the networking project. During the project, its visibility and reputation grew; an additional six new members joined the network. Even though they were not granted state funding, they still wanted to join. Therefore, the internal legitimacy of the network concept or form, also at network level, could be assumed to exist from early in the evolutionary process.

The funding body of the project had experience, particularly of network projects, so the external legitimacy of the network as a form was also established at least with that stakeholder early on. Also, potential customers were introduced to the networked way of operation in collaborative workshops and they considered it interesting, therefore the case network as a legitimized unit, and also the external legitimacy of the network as a form was established, at least to some extent.

Compared to the prior study of Human and Provan (2000), where the network as a form was not established internally in Betanet and externally in Alphanet, this case network differed greatly in terms of both the internal and external establishment of the network as a form. This naturally reflects the permeation of the network concept, at least in the Finnish maritime industry. However, the network companies' previous ties in the global markets and target market countries might have been a potential benefit for the other companies. However, they may also have signified that networking, as a strategy within this particular network, was just one method of collaboration for the organizations. In that sense, it could be a barrier for this particular network: organizations use multiple alliances and networks for their collaboration. Also from an organizational learning point of view, as most of the organizations already had an international business and were present in the

markets as individual organizations, they would have an opportunity to learn more from each other about the markets.

To summarize, the network as a form was very well established internally in the case network at the organizational level from the outset of the networking project and to some extent at the network level, too. Regarding the external legitimacy of the network form, the funding body was an experienced one and legitimacy at least with that stakeholder was established very early on. Also, the potential customers showed interest towards a networked supply by a group of companies, yet total legitimation of the idea to them remained to be seen.

5.2.2 The network as a strategic intent

The network as a strategic intent was manifested in the case network via different goal setting and strategies drawn up by the network, as well as via the vision of the potential network governance form. The network organizations involved in the strategy process all had an equal opportunity to contribute to the outcome through participating in the network activities. The case network's strategy process was carried out according to the project plan. However, the rules of the public financing grant forbade the network from carrying out any commercial efforts, so the network shifted towards joint capability-building efforts. In turn, without a concrete commercial case, there was no real transaction to be discussed, or marketing and sales collaboration to be practised. Therefore, the objectives of the network were two-fold:

Firstly, the objectives of the three-year networking project were written in the project plan. These objectives were expressed as a joint capability-building strategy, which was formulated and implemented successfully. However, the capability-building strategy process revealed that the capability-building needs were different for different organizations. This is in line with the model of Burgers et al. (2008) regarding the exploration of technological knowledge and starting the exploration of market knowledge in the early phase of new business development. However, the network organizations showed little readiness to invest in capability building. Additionally, some of the network organizations had a strong outside-in legitimacy-building vision at organizational level. Some of the organizations were very keen on the idea that before any joint network actions, network building or network capability-building efforts were taken, the network should have had a transaction going on with the customer. They did not consider the internal legitimacy building important. Thus, there seemed to be a "chicken or egg" dilemma: the organizations wanted to have a commercial case before investing in capability building for new markets, yet they would not have

the opportunity to enter the new markets, particularly quality-wise demanding markets, without the required capabilities. The organizations may have seen networking as a way around this dilemma: finding the capabilities missing from their own organization among their network partners, thus managing knowledge as a resource, as suggested by e.g. Meyer et al. (2009). However, in that case, the organizations have to be aware of the costs of exchange: they have to have something else to offer in return, or they must be willing to lose the power – the power of knowledge, to their network partner. As the capability-building strategy was also implemented, it had the output of an incipient knowledge network or equivalent.

The second type of objective, i.e. the ultimate goal of the network, concerned joint market entry with commercial goals. These objectives did not appear as a coherent strategy or any written strategy, although many potential scenarios were envisioned by the network organizations. However, they did envision potential network governance forms for the network. They came up with three types, one of which was an interesting hybrid.

Van Raaij (2006, p. 266) points out that *"the origins of self-initiated networks indicate that their members strive for a specific goal, which is only attainable by a network."* Valkokari (2015a) emphasizes the difference between strategic intent and other concepts of strategic management, which is the notion of intent being based on joint sense making between multiple organizational levels. The findings in this case network also confirm this presumption: the ultimate reason and goal for the networking was the joint entry into the market for vast offshore structures, which none of the networks could achieve alone, which was a joint goal, not a single organization's goal. However, the external key stakeholder, i.e. the public funding body, defined a different goal for the network project to accomplish.

5.2.3 Supply network archetype

With the results of the research presented on the network as a form and network as a strategic intent, the type of network at hand can be determined during its formation, at least to some extent. Therefore, the third research sub-question addressed the type of supply network that the case network under study was, aiming at discovering the archetype or archetypes that this case network represents according to the supply network typology of Pathak et al. (2014).

RQ1c: Which supply network archetype or types are identified when viewing the network legitimacy dimensions of network as a form and network as a strategic intent via the supply network typology of Pathak et al. (2014)?

According to the supply network typology by Pathak et al. (2014), supply networks can be viewed via four elements of supply network archetypes: 1) the goals of the network, 2) the firm-level tasks, 3) the ties between the firms as well as 4) the network governance form.

Using the results received from the case network, which was a formally constructed and organized network with previous business ties in a three-year project, it can be determined which of the supply network archetype or archetypes the case network represents (Table 26).

1. The case network had two types of network goals: the goals of the three-year networking project, as well as the ultimate goal of joint market entry. When comparing the goals of the network to the network archetypes (Pathak et al., 2014) and their network-level objectives, there is a certain correspondence to each of the archetypes. However, the case network has more features that correspond to two of the archetypes: the federation and consortium supply networks. The case network is for a specific geographical area: Finland, like the community supply network, yet the products and services are not associated with the region, but to a certain industry; the businesses are not small and the aim is not to create a common marketplace or find a local aggregation point. Compared to the hierarchy supply network, the network consists of a tiered supply chain, but initially, the network organizations did not have any contractual obligations to fulfil. The aim of the case network was knowhow-, knowledge-, and capability-oriented as in the consortium supply network, yet with the ultimate business goal as in the federation supply network.

2. and 3. When the firm-level tasks and ties between the firms were mapped, it revealed the structure and competitive situation of the supply network. The network did have all the required product and service offerings to deliver a joint entity as a supply network. However, there were also competitors within the network, which had non-collaborative strategies towards their competitors, which may have caused problems for the network collaboration. Viewing the firm-level tasks and ties between the firms from the viewpoint of network archetypes, the network as an entity can be seen to have features of both the federation as well as consortium supply network archetypes. There is fierce competition together with the aspiration for joint knowledge

development as in the consortium archetype, as well as the intention of commercial collaboration as in the federation supply network archetype. The results revealed that companies within the network had various outlooks on competition. The design and engineering companies, as well as the propulsion equipment and thruster manufacturers, formed their own sub-clusters within the network. However, they differed in their attitudes towards collaboration with competitors. The design and engineering companies collaborated, often even partnered with their competitors. The propulsion equipment and thruster manufacturers were more heterogeneous outlook on collaboration with competitors. Only one of the propulsion equipment and thruster manufacturers had applied a true partnering and co-opetitive strategy towards their competitors, one collaborated too, while two companies did not collaborate or were even forbidden to collaborate with competitors. This implies that a co-opetition strategy may be easier applied by service providers than by product providers. Thus the design and engineering companies could consider forming their own federation-type supply network, where they could use each other as their resource pool and also potentially form a consortium supply network, where they could collaborate on R&D and develop new knowledge. An interesting point for the potential future commercial case is that this would lead to niche specialization, causing cliques that might shift a federation supply network more towards to a hierarchy supply network.

4. From the aspect of network governance forms, the three-year networking project was NAO-governed and the aim of the interactions was information gathering regarding the network and strategy work for the network, therefore making it a consortium-type supply network. However, for joint commercial actions in the future, the network organizations envisioned three potential governance form models. The project organization model is an NAO model, which is seen as the governance form of the consortium supply network (Pathak et al., 2014). The contractor model corresponds to the lead organization model as in the hierarchy supply network archetype. The hybrid or project service agreement model has characteristics of the hierarchy supply network as the contracts act as the vehicles of governance, yet there is the value adding feature of integration. Integration could potentially be interesting to the customer if it brings substantial value to the total value chain, e.g. whether as a decreased total cost or total delivery time.

   The hybrid model of the project service agreement model itself, envisioned by the network organizations, is an addition to the network governance forms previously reported in the literature by e.g. Provan and Kenis (2008). Although the model was not implemented in practice

as a network governance form, it can be considered as a significant finding and its existence should be further studied.

Table 26. Comparison of the case network to supply network archetypes

	Consortium	***Federation***	***Hierarchy***	***Community***
Goals of the network	The aim is know-how, knowledge, and capability-oriented	Ultimate goal is joint business	Three-year project: Tiered supply chain, yet no contractual obligations	Specific geographic area, yet products not associated with the region
Firm-level tasks and ties between firms	Fierce competition together with the aspiration for joint knowledge development	Intention of commercial collaboration		
Network governance	1. NAO-led three-year project 2. Project organization form with NAO		1. Contractor model with lead organization 2. Project Service Agreement model	

When the results are viewed considering all the aspects of the supply network: the goals of the network, firm-level tasks, ties between the firms and the envisioned governance form, the network as an entity can be seen to have features of mainly of the federation and consortium supply network archetypes. The network is a consortium archetype due to the fierce competition together with the aspiration for joint knowledge development, and the federation archetype, due to the intention of commercial collaboration. The results also exposed the organizations' differing perspectives regarding competition. Two sub-clusters of competitors were identified, one of service providers and the other of equipment manufacturers having varying outlook on collaboration with competitors. Service providers homogenously speak on behalf of the co-operation, whereas manufactures are more conflicting in their views. This may imply that the co-opetition strategy might be easier to apply for service providers than for equipment producers. From a network perspective, the design and engineering companies could consider forming their own federation-

type supply network, where they could use each other as their resource pool and also potentially form a consortium-supply network, where they could do R&D collaboration and develop new knowledge. Moreover, niche-specialization might develop a federation supply network more towards to a hierarchy supply network.

However, from the entire network's point of view, non-collaborating competitors potentially cause problems within the network. In cases where the aim is for a consortium supply chain type of networking, an external non-partisan third party organization would be needed to connect at least a key set of players in the industry and set up governance across a network of firms, such as an NAO or a project company to form a collaborative work environment for safe information exchange and new knowledge creation. However, a consortium exists and thrives when members engage in intense co-opetition in learning and capability development while maintaining their competitive engagements outside the consortium in the regular business world. Therefore, the participants should discuss how to solve the discovered competition within the network with non-collaborating partners. One possibility is for the network to first concentrate on joint training and capability development efforts, like in a federation supply network, before embarking on joint commercial efforts.

To conclude, the network under study has features of both consortium and federation supply network archetypes. This was due to the two-fold strategic goals, firm-level tasks and ties between the firms. The network had all the required product and service offerings to deliver a joint entity as a supply network and the envisioned network governance forms. However, there were also competitors within the network, which had non-collaborative strategies towards their competitors, potentially causing problems for the network collaboration with various outlooks on collaboration with competitors. Also, the results revealed a sub-cluster, which could set up their own federation network.

5.2.4 The network as an interaction

The network as an interaction was manifested in the case network in the form of face-to-face interactions and documents, as well as the extent of participation of the network organizations, both amongst the network and together with external stakeholders such as the potential customers. In addition, the NAO played an important role in the network interaction.

In the case network, the interaction or at least participation in the network's interactive events was active. One enabling element for the interaction was the public funding, which, on the one hand, enabled the management and organizing of networking efforts, and, on the other hand, required the organizations to participate and report on their participation in order to receive their funding. Contrary to the findings in the prior network legitimacy building study by Human and Provan (2000), where organizers, especially at the beginning, faced considerable barriers to "building a case" for network interaction, in this case network the interaction or at least participation in the network's interactive events was active, occurred regularly and in a fairly open manner during the entire project. Moreover, the organizations executed tasks formulated in accordance with the networking project plan, for instance, by conscientiously participating in the joint meetings, workshops, and particularly in the interviews, as long as the interaction was systematically arranged and managed by the NAO.

However, when the systematic interaction events stopped after the project, the network-level interaction ceased, apart from random discussions in smaller groups, potentially forming sub-networks. Therefore, the federation supply network as a whole also failed as interaction. In general, federation-type networks probably need more ongoing interaction both internally and externally, and perhaps this network would also have required systematically arranged and managed interaction for a longer period of time than three years. This could have been organized by the NAO or a lead organization. The costs for interaction management could have been covered via a collective financial arrangement, perhaps even with the help of further public grants. Whether the management of further network interaction after the network project would have taken place by the NAO or a new lead organization, a change in the project leader could have been one possibility for taking the network interaction, especially the external interaction, to another level, as in the previous study of Human and Provan (2000). With fresh insight, a new director could have made the vision of the network shift in other direction, for example by focusing on the potential sub-networks.

However, the interaction continued amongst those people involved in joint capability building. In other words, the consortium supply network survived for a period of time after the network project. Therefore, the consortium strategy of joint capability building succeeded for longer. However, interaction in the consortium type is different than in the federation type: the people participating in training for example are not always exactly the same. Depending on the consortium type, consortia may not require as much interaction compared to federations, in general. This means that the network involves a wider group of people, but with looser couplings. In turn, it signifies that the

interaction is spread around the network. This may generate a nice buzz between the organizations, but it also causes the network as an entity to have a different character than when organizations are doing business together as in a federation.

External interaction was also active with collaboration with potential customers and universities abroad, as well as ministries, business federations, other organizations and universities in Finland.

To summarize, the internal interaction was carried out within the network as the active participation of Finnish maritime organizations in the networking project and external interaction as collaboration with other stakeholders in Finland and abroad. The active execution of networking tasks was carried out according to the written project plan by the network organizations. Therefore the interaction of the network regarding network legitimacy building during the formation phase was at a good level. However, the continuance of managed network-level interaction in order to achieve the ultimate goal of joint market entry was not ensured after the three-year networking project. On the other hand, network-level interaction continued in the capability-building setting by those involved in capability building.

5.2.5 The network as an entity

The network as an entity was manifested in the case network as the actions and credibility of the NAO, the roles that both the internal and external key stakeholders played, and in the network entity building carried out according to the project plan.

The network administrative organization, or NAO, with the Board of Directors of the networking project, can be viewed together as a viable administrative entity with a recognizable form for promoting the network concept while managing the network activities and growth. The key internal stakeholders: the project leader, the manager of the local organizational development company and the participating organizations were all very much involved in the network, thus contributing to the inside-out legitimacy-building strategy of the network as an entity. The key external stakeholders, such as the national funding company and customers and other contact forums in the potential market countries were also involved, since an outside-in strategy is also important for legitimacy building from the perspective of the network as an entity. Particularly with Russian customers, the Finnish network became a concept, with a brand-like identity. However, with potential customers abroad, entity building did encounter some difficulties, due to the discussion being at the hypothetical level and also practical issues, such as contracts, rules for local content percentages

etc. From the target market countries' viewpoint, the entry to their markets could proceed in collaboration with their local stakeholders either 1) by pursuing a knowledge network or consortium archetype, or 2) by establishing a presence in the target country in an industrial park, for instance.

The entity was built according to the project plan with the NAO operating as the primus motor in network project's all three strategy phases. First of all, there was the identity that was legitimized amongst the network organizations during the three-year networking project, and secondly the identity that they were building for the network after the project, which was to be carried out according to the jointly created strategic plans. The major impact on the two-fold identity building came from the rules of the public funding: it placed strict restrictions on the network project activities and the nature of the project was to be an analysis of the network and its capabilities with no commercial activities allowed. However, discussions with potential customers also revealed that market entry might have a similar two-fold vision: as a knowledge network or consortium archetype with collaboration with research institutes and universities, or as an established entry and presence in the target country's markets.

Human and Provan (2000, p. 338), point out in their results, that although it is important to understand the network concept and have it legitimized, it is not enough for success: *"The network also had to develop a recognizable identity"*, which is also considered by Valkokari (2015a) in her concept of shared identity and van Raaij (2006) in her concept of climate. Furthermore, the active participation and involvement of both internal and external key stakeholders in the case network indicate that the network did develop its own identity, which the organizations considered important to be attached to. The organizations not only wanted to network, they also wanted to network specifically within the case network. Therefore, the network entity or identity played an important role within the legitimacy building of the network. In the prior study of Human and Provan (2000), NAOs had the role of the primary mechanisms for legitimacy building of the network as an entity. This study also confirms that the role of the NAO is a major one. Additionally, legitimacy building of the network as an entity is especially profound if there is the support of network organizations, particularly via their Board of Directors. Thus internal legitimacy has a solid ground for growing. Also, as suggested in the prior study, external stakeholders play a major role in the legitimacy of the network as an identity, particularly when they are approving it for networked collaboration and want to consider the network as a "brand". Therefore, this confirms the suggestion of Raab and Kenis (2009, p. 200): *"As organizations and networks for themselves are both goal directed bounded*

social systems, identity formation follows similar patterns". When the identity of the network is strong enough, the environment outside may also regard it as an organizational entity.

To summarize, the network as an entity is manifested in the legitimacy-building case network as the network being both internally and externally very strongly legitimized as its own entity, having its own identity that both the network organizations and external stakeholders identify with. A comparison to the cases of previous studies is compiled in Table 27.

Table 27. Comparison of the case network to the previous cases of Human and Provan (2000)

	Alphanet (Human and Provan, 2000)	***Betanet*** (Human and Provan, 2000)	***Case network***
Pre-network phase			
a) Pre-network climate	Weak	Weak	Strong
b) Legitimacy of industry	Weak	Strong	Strong
c) Existence of preliminary support by potential key stakeholders	Internal	External	Internal and external
Network formation phase			
a) Network as a form	Not externally established	Not internally established	Both internal and external establishment
b) Network as a strategic intent			Two-fold: 1) Objectives of three-year project with output of Capability-building strategy 2) Ultimate goals: joint market entry with output of no strategy
c) Network as an interaction	Barriers to building a case for interaction	Barriers to building a case for interaction	1) Interaction active during the project when managed by NAO 2) After the project: a) ceased regarding market entry b) continued regarding joint capability building
d) Network as an entity (legitimacy-building strategy)	Not internally established: Overall inside-out strategy	Not internally or externally established: Overall outside-in	Overall both inside-out and outside-in strategies

To conclude, all four dimensions of the network formation phase presented in the theoretical framework of network legitimacy building are manifested in the case network as follows:

1. Network as a form was very well established internally in the case network at the organizational level from the beginning of the networking project and to some extent at the network level, too. Also, the external legitimacy of the network form, at least with the funding body, which was experienced in funding networks, was established very early on.

2. Due to the restriction of the public funding, the network as a strategic intent was two-fold: 1) the objectives of the three-year networking project, which were written in the project plan and 2) the objectives of the ultimate goal of the network.

3. The network as an interaction, both internal and external, was active, thus at a good level, throughout the network project and was carried out according to the written project plan. However, after the three-year project, the network-level interaction regarding commercial market entry ceased, but continued in terms of capability building, with network organizations and people participating in a capability-building setting.

4. The network as an entity was manifested in the case network as being directed both inside-out and outside-in, being very strongly legitimized as its own entity, and having its own identity that both the network organizations as well as external stakeholders identified with.

The answer to the first main research question "*How do network actors build legitimacy during the formation of a whole supply network?*" is first of all based on the pre-network phase and its three dimensions. In general, the fundamental three dimensions of the pre-network phase were manifested in the case network at a good level, compared to case networks in the previous studies. In this case network, the role of the pre-network dimensions in legitimacy building was, therefore, a solid foundation for the legitimacy-building dimensions in the following network formation phase. Secondly, the network actors built legitimacy in the formation phase via the four dimensions of legitimacy building. Moreover, in the case network, all four dimensions of legitimacy building were manifested and all of them played their own significant role in the legitimacy building of the case network. Particularly, the network as a form and network as an entity affected the legitimacy building in a positive manner, thus creating grounds for the successful overall legitimacy building of the network.

In the light of the results, these two dimensions of the network formation phase seem to be easier to build up in a network with experience of networking together with dense and multiplex relationships amongst the network organizations. During the network project, the network as an interaction also affected the legitimacy building in a positive way, yet its cessation after the project highlights its important role as a dimension, which requires careful management depending on the supply network archetype that is aimed for. Notably, the network as a strategic intent was manifested in the case network in two ways, which may cause a challenge for its implementation and legitimacy building, especially if the network strategy's two-fold character is somehow overlooked. Thus, it stresses the essential role of the network as a strategic intent and its heedful need for management in legitimacy building.

Furthermore, the four dimensions of legitimacy building in the network formation phase were also at a different level compared to the networks in previous studies on network legitimation building. In the literature, Human and Provan (2000) have suggested that the dynamics of evolution of formally constructed networks and those organized from scratch differ from those that emerge from previous business ties. This case network was formally constructed and organized, yet there was a strong foundation of previous business ties and most of the organizations had shared origins. Also, most of the people were familiar with each other prior to the network project. However, the network did not emerge spontaneously per se. To conclude, the case network was a formally constructed and organized network with previous business ties, yet in its evolution, there were major differences from networks built from scratch.

5.3 Identified contingencies present in legitimation building during the formation of a whole supply network

The previous literature by Human and Provan (2000) suggested that the dynamics of evolution of formally constructed networks and those organized from scratch differ from those that emerge from previous business ties. This case network was formally constructed and organized with previous business ties and, according to the results regarding the network legitimacy-building dimensions, the dynamics do seem to differ from those founded from scratch. Therefore, the second main research question focused on the outcome of the network in terms of network legitimacy building and the contingencies that contribute to the dynamics. The aim was to discover the factors that contributed to the outcome of the network legitimacy after the three-year networking project.

The second main research question to address these issues were initially formulated in the following manner:

RQ2: Which contingencies are identified to exist in legitimacy building during the formation of a whole supply network?

The feedback gathered from the network organizations revealed that the NAO carried out the operations assigned to it in accordance with the project plan, and the network organizations attended the systematically carried out project with beneficial collaborative workshops. Even the potential customers were pleased with the collaboration. Also, the feedback revealed that the organizations were particularly satisfied with the joint training strategy and its implementation, which according to the project plan was the main aim of the network project, due to the public funding grant restrictions. Although the organizations understood these restrictions, they still felt that the results of the three-year period were hypothetical, lacking concreteness. However, the organizations found that the reason for this non-concreteness was also of their own making, since commercial ventures are missions for corporations, not publicly financed projects, and secondly, since some of the organizations adopted the role of observer, rather than actor.

The positive feedback on the networking effort was equivalent to the strategic goals of the three-year networking project: the capability-building strategy was well formulated and implemented. However, the negative feedback concerned the ultimate goal of the network: joint market entry. The joint market entry with its commercial goal remained abstract for the network organizations and the lack of written strategy may have contributed to their attitude. Therefore, from the legitimacy-building viewpoint, it appears that in order for companies to acknowledge the achievements of networking, they have to have a tangible, preferably commercial outcome: something to supply, a product or a service, a counterpart, a customer, and commercial benefits, sales – or at least a solid strategy to implement. As long as there is no business, networking is abstract, even considered unsuccessful by organizations. In this case network, the goals that the network reached together, like the joint strategy for capability building with the implemented operations, were not perceived as concrete networking, although there are networks that are built solely for that purpose, like Sematech (Browning et al., 1995) or Textile Dyeing Technologies (3T) in Turkey (Cetindamar et al., 2005). Therefore, with a large number of organizations, network management requires extra attention to communication, especially about strategy formulation, as well as communication of the strategy and strategic goals. Table 28 presents the contributing issues, either by enabling or

hindering the case network's legitimation building, categorized according to the contingency framework by Järvensivu and Möller (2009). The listed enablers and barriers shed light on the dynamics of a formally constructed and organized network with previous business ties and portray the complexity of networks and networking as an organizational phenomenon: for each enabler, there is also a barrier to face.

Table 28. Identified contingencies in legitimacy building in pre-network and network formation phases of the case network

Enablers	***Barriers***
Basic management-level contingency	
Industry	
Industry's experience in networking enabled the case network's understanding of networks as a concept, i.e. legitimacy of the network as a form	Industry structure involves many competitors, which may lead to cartel problems in any network collaboration
Task-level contingencies	
Reason for networking	
The fundamental idea for networking was based on joint supply of products and services: no single organization had sufficient resources, but needed those of others	
Role of public funding	
Public financing via experienced funder of networking projects allowed the management and organizing of networking efforts, such as interaction and entity building	The terms of the public financing restricted the network from taking any commercial actions during the project, hence the network strategy focused on joint capability building
Interest in networking and interaction	
Networking part of nearly all organizations' strategy and at least visible in operations and organizations used to partnering	Networking in this network just one strategy and method for collaboration: organizations use multiple alliances and networks for their collaboration
Active participation of organizations in the networking project enabled the interaction and entity building of the network	Although active, some of the organizations were observers, not actors
Active execution of networking tasks according to written project plan by the network organizations managed systematically by NAO	Interaction within the whole network regarding joint market entry ceased when the interaction was no longer managed by NAO
Active interaction with external stakeholders brought new members to the network and created a brand-like entity	Without a real commercial case, the interaction with potential customers remained hypothetical

Table 28. Identified contingencies in legitimacy building in pre-network and network formation phases of the case network (continued)

Enablers	*Barriers*
Role-level contingencies	
Network structure	
NAO's primus motor role supported by network organizations and especially by Board of Directors	Many organizations had multiple ideas on where the network should focus e.g. market entry, therefore no coherence
Equal opportunity for the organizations to participate in and contribute to the network operations	
The network organizations were multiplex and could supply all major parts needed for a joint structure, also hub firms and potential hub firms for sub-networks exist	Small numbers tendering and opportunism: monopoly problem, preference issues, conflicting interests of corporations and their subsidiaries
Collaborative strategies towards competitors enable networking and creating "resource pools" amongst network partners	Non-collaborative strategies towards competitors cause difficulties in networking
Capabilities and inter-organizational learning	
Global business experience and current presence in the target countries with variety of IO relations for others to benefit and learn from	The lack of transaction left the organizations with no opportunity to learn in reality how the network would operate
Organizations had different capability needs, thus different knowledge to learn from each other	
Key stakeholders	
Both internal and external key stakeholders were active, engaged and contributing	
Outcomes due to strategy	
Network strategy focused on capability building; strategy formulated and implemented successfully; also knowledge network as market entry strategy supported by potential customers	No strategy for a real commercial transaction was made
	Network organizations require tangible, preferably commercial outcomes
	Little readiness to invest in capability building amongst the network organizations

In the previous literature, a research gap has been discovered on how to use scarce resources for network development best (Human and Provan, 2000). Naturally, amongst the elements that either enable or hindered the network's legitimation building, there are issues that cannot be changed or influenced, such as the industry structure or industry's experience in networking. However, some of the enablers or barriers can be influenced or at least contemplated. In the following, some of the enablers and barriers discovered in this case network that could be learned from and thus taken into account, are elaborated on by comparing them to previously studied cases.

In the previously researched cases, the networks consisted of SMEs (Human and Provan, 2000). In this case network, the organizations were a heterogeneous group of different sizes, thus bringing new information on mixed networks. Competition also arose as a phenomenon as two sub-networks included competitors. Naturally, this also caused the consideration of their collaborative strategies towards competitors, which varied both between and within the sub-networks, from partnering to non-collaborative. After all, competitive, i.e. non-collaborative strategies towards competitors may cause problems within the network.

Compared to some of the previously researched networks that have been constructed and organized from scratch (e.g. Human and Provan 2000), this case network had a strong foundation with both previous business ties, and the fact that networking as a form was familiar to the network organizations. In addition, the organizing of the network was based on a project plan, which was executed as a series of regular network-level face-to-face interaction events of board meetings, workshops and interviews, and written interaction via memos and strategy reports as well. The interaction was carried out both internally and externally without problems, compared to the previously studied case networks (e.g. Human and Provan 2000) Thus, previous ties, familiarity with networking and carefully planned interaction lay a firm foundation for legitimacy building. Human and Provan (2000, p. 363) suggested that *"from a policy perspective, our findings on how SME networks evolve suggest that state or local governments might consider strongly supporting the network through its NAO during formation and early growth, legitimizing the NAO and the network form."* In this case network, the government funded the three-year period of network formation, thus enabling the interaction among the network organizations and potential customers, therefore contributing both to the internal and external entity emergence. However, without the NAO's management of the interaction, the network-level interaction diminished significantly after the project. Perhaps there should also have been government support, not so much for the consortium type of operations, as it carried on for some time without support, but for the federation type of actions to cultivate the interaction for a longer period of time. However, the earmarked governmental support did have a considerable effect on the manner in which the interaction was arranged and managed within the network organizations. However, in their feedback, the network organizations did not find the role of the public funding prominent in the future. On the contrary, most of them had quite a neutral viewpoint: funding helps, but the network's decision making should not be based on it, and only those independently viable parts of the network or networking should carry on. As maintaining interaction is essential for viable networks, ensuring its continuance is

fundamental. Nevertheless, had the network applied for further funding, public or private, in order to continue the interaction aiming at the legitimized formation of a federation supply network, it should have been such that also allows commercial action.

When looking at the major obstacles within the legitimacy building of this network, the two-fold character of the entity building of the network stands out. This means that the network organizations were satisfied with the joint knowledge network or consortium supply network that they were able to create as an output of the three-year networking project, as they were supposed to do. Yet at the same time, some of them were dissatisfied with the non-concrete outcome, since no commercial case or joint market entry was achieved, in line with the public funding restrictions. The two-fold character of the entity was a chain effect (Figure 27), caused by the restrictions of the public funding, which caused the network's strategic intent to be split into two strategies: 1) the joint capability-building strategy, which was formulated and implemented successfully, and 2) the ultimate goal of joint marked entry which was neither written down nor implemented. Van Raaij (2006) points out that the internal legitimacy of the topic, i.e. strategy and the network as an organizational form, relate to the network's climate or entity and its activating capacity, i.e. interaction, which was also found within this case network.

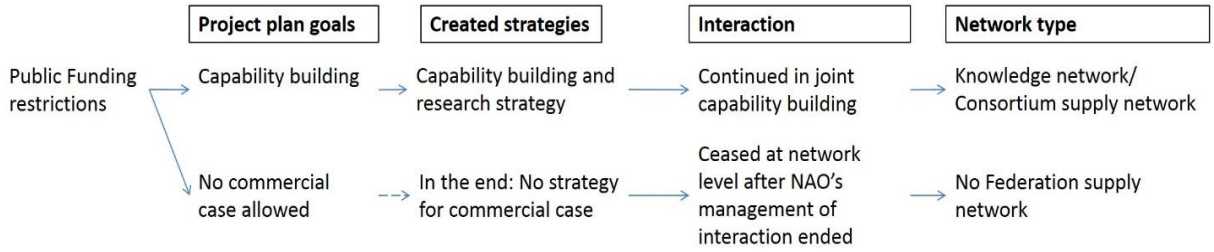

Figure 27. Chain reaction into two strategies caused by the restriction of public funding

According to Human and Provan (2000, p. 349): *"The overall strategic orientation of the network for building legitimacy (inside-out versus outside-in) that emerges during network formation will reflect the needs and interests of the dominant stakeholders in the pre-network organizational field"*. Although the case network had both types of overall strategic orientations for building legitimacy, the chosen strategy of the case network by the key stakeholders, particularly by the public funding body, focused the legitimacy strategy on the inside-out orientation for creating a knowledge network or the consortium supply network archetype. However, some of the organizations wished for the outside-in orientation and federation supply network archetype, thus creating tension between these two strategic orientations of legitimacy building within the case network. This is also

understandable since van Raaij (2006, p. 266) points out that *"the origins of self-initiated networks indicate that their members strive for a specific goal, which is only attainable by a network. Hence they are not only concerned about the performance of their own organization, but also about the network's ability to attain the goals it was initially created for."* In other words, some of the networks regarded the ultimate reason and goal for the networking the joint entry to the market for vast offshore production structures, which was not achieved. Therefore, although they appreciated the results the networking project gained, they also considered that the network had not attained the goals it was initially created for, which confirms van Raaij's (2006) assumption. Therefore, the communication of the network-level strategic goals and orientations is crucial – at least in democratically run networks by an NAO, as in the case network. However, according to Valkokari (2015a), communication is not enough, but the strategy formation process needs to be interactive and transparent, aiming at joint sense-making between all network members. She emphasizes that the *"shared frame of decisions, i.e. the joint goals of the 'net'"..."should be identified and agreed by all network members"* (Valkokari, 2015a, p. 221). In her opinion, without this identification and agreement of these shared joint goals, the network may even dissolve. However, the process might be hard in networks like the case network, where the network goals may be contradictory to an individual organization's own networking goals. Valkokari (2015a) points out that there is conflicting interest amongst network actors, therefore network formation and development is always a negotiation process. This negotiation process includes the interest of the actors and the network. We can only assume that in the case network, the negotiation was not carried out as far as it should have been, that it was cut off before its prime, or continued amongst other networks.

In the case, the consortium or knowledge network succeeded longer, but in order to survive, it would probably have required more commitment from the network organizations. Although the need for capability building was established, and the efforts regarding the joint capability building were perceived as positive, yet the lack of commitment could be seen in the interview results. As the number of people considered to have training needs by the network organizations was rather small, it can be interpreted that the organizations were not willing to build capabilities very widely within their organizations before commercial efforts came to fruition. This creates challenges for a knowledge network to provide capability building in a flexible, on-demand manner. This could signify either a lightly structured virtual organization or the integration of that service into an organization that also provides another similar type of capability-building service, such as universities or other training centres. Therefore, the weakness within the legitimacy building of the

consortium or knowledge network was internal: lack of commitment and ability to provide joint capability building in a sufficiently flexible manner in comparison to the demand. In addition, the federation archetype network with commercial efforts did not materialize on the whole, and the failure to build legitimacy was mainly due to the lack of joint strategy concerning commercial efforts for the organizations to commit to, therefore internal legitimacy was not established for that part. However, the potential customers may have had a boosting effect on the internal legitimacy through the external legitimacy. The potential customers and the external legitimacy for both the consortium and federation archetype supply networks did exist to some extent: the potential customers recognized the network type of organizing, thought it a solid way of organizing, and even regarded this network as a brand. However, unfortunately, the extent of the external legitimacy of the network by the potential customers did not boost the internal legitimacy building enough in order for the federation archetype to take off.

To summarize, multiple contingencies affected legitimacy building in the case network. Most of the contingencies both enabled and hindered the networking endeavours. However, in many ways there were many legitimacy issues within this case network that seemed to be in place: the network as a form and entity was legitimized even prior to the network formation, both for inside and outside strategies that were carried out in parallel. However, a conflict between the network and organization-level views on the legitimation strategy to be executed (inside-out, outside-in, or dual) caused friction, and thus, if the network wished to continue as a democratically run entity, the strategy options should be communicated, discussed, agreed and committed to by the network and by the network organizations, too. Furthermore, constructing and organizing a large federation type of network for new market entry evidently takes longer than three years. Thus, if a federation supply network is the goal the network wants to achieve, the interaction amongst the organizations committed to the goal should be ensured one way or another. Additionally, commitment towards the network should be established in general, or at least it should be acknowledged that the commitment of the network organizations may be low, fluctuating or even friable, which portrays the dynamic character of networking: networking in one particular network is just one of the strategies that organizations pursue, and it is carried out as long as the need and resources exist. Naturally, organizations with a genuine commitment to the network are more desirable network partners, than those just monitoring the situation.

6 Conclusions

This chapter sums up the main findings and contributions of the study. The study's contributions are divided into theoretical and practical implications. This chapter also contains an assessment of the research process. The qualitative part of the study is evaluated in terms of eight criteria, particularly in terms of transparency. Additionally, the limitations of the study are contemplated together with suggestions for further research.

6.1 Summary of the study

Although legitimacy building has been widely studied in an organization context, legitimacy building in networks, particularly in whole networks, has remained relatively unexplored. The purpose of this study was to explore network legitimacy building in a whole supply network during its formation phase. Whole networks are consciously created and goal-directed networks while supply networks are networks of firms engaged in the manufacturing and assembly of parts to create finished products. The reason for choosing these research objects was to understand the success and/or dissolution of a whole supply network from the legitimacy-building viewpoint and the contingencies affecting networks in their early phases.

In order to address this issue, the topic was divided into two main research questions, which were answered with the help of mainly qualitative research material, although quantitative material was also utilized to support the qualitative material. A case study in a three-year networking project with a total of 61 interviews was conducted to explore the perceptions of the network organizations regarding the four dimensions of network legitimacy building in early network formation. In addition, a survey was carried out to study the organizations' views concerning their capability-building needs for networked operations in the new markets that the network pursued to enter. Additionally, observations in six network workshops and eight board meetings, together with different documents concerning the network, were used for studying the dimensions of network legitimacy building during the network formation phase. Also, secondary data was used for exploring legitimacy-building dimensions particularly in the pre-network phase.

First of all, this dissertation provides new information on whole network legitimacy formation in completely unexplored pre-network circumstances compared to all previous studies of whole

networks. The results of the research showed that in the case network the pre-network legitimacy situation regarding all the three pre-network dimensions was at a good level, therefore portraying the significance of the three pre-network legitimacy-building dimensions as a strong foundation builder for the legitimacy-building dimensions in the following network formation phase.

Secondly, this study contributes to the theory of legitimacy building by combining previous studies of network legitimacy and network dynamics and presenting a four-dimensional framework of legitimacy building in the formation phase. The results of this research show that each of the four legitimacy-building dimensions, i.e. the network as a form, the network as an interaction, the network as an entity and the network as a strategic intent, all have a unique and important role in network legitimacy building. However, this research highlights the essential role and impact of the formation and communication of the network's strategic intents to the network's legitimacy building, which had previously been disregarded. The results show that, even when the pre-network legitimacy building is solid and the other three dimensions (network as a form, interaction, and entity) of formation phase are at a good level, i.e. legitimized, the unclear strategic intents may cause issues in legitimacy building by being multiple, even overlapping and realized asynchronously over time. For instance, although the strategy for a short-term network project is formed and implemented successfully, the network organizations may still perceive the end outcome of the network as hypothetical, lacking concreteness, e.g. due to the missing tangible results in their long-term strategic intent. This complex nature of multiple, overlapping and asynchronously achieved strategic goals is the major finding of this dissertation, which emphasizes the significant role of the network as a strategic intent in the legitimacy building in a whole supply network formation. Also, contributing to the discussion of supply network archetypes, the results of this research indicate that the multiple network goals may result in different network archetypes and combinations of them. In turn, the different network archetypes require divergent goal setting. Either way, the different goals and archetypes require differing strategies and strategy processes, which also have to be communicated, especially to the network organizations. In short, more focus on strategy and strategic thinking is needed in whole network formation.

The role of interaction in legitimacy building has been emphasized in previous studies. Thirdly, by contributing to the discussion of supply network archetypes and particularly to their interaction and communication requirements, this research suggests that different network archetypes require differing interaction and communication types and patterns, which if disregarded, may contribute to the dissolution of the network, and in turn, when taken into consideration, may contribute to their

success. For instance, consortium supply networks may survive longer with a centralized, more one-way type of communication towards the network organizations, as the network participants are loosely coupled with different people attending from one event to another and thus the interaction being spread around the network. However, federation networks aiming at joint commercial efforts do seem to require more coordinated and managed two-way interaction for their survival.

Besides public funding, other identified contingencies include the reason for networking, industry experience and structure, network structure, interest in networking and interaction, inter-organizational learning, key stakeholders and outcomes that contribute to the legitimacy building within whole networks. These contingencies may either enable or hinder the networking – or both, illustrating the complex dynamics of network legitimacy building.

6.2 Contributions of the study

This section highlights the contributions of the study from both a theoretical and managerial point of view. As the study is one of the few attempts to explore legitimacy building in whole networks, theoretical contributions can be drawn from the results. There are also suggestions for managerial practices, as the topic originated from a real-life networking case.

6.2.1 Contributions to prior research

Although legitimacy building has been widely studied in an organization context (e.g. DiMaggio et al., 1983; Suchman, 1995; Sonpar, Pazzaglia and Kornijenko, 2010), legitimacy building in networks, particularly in multilateral whole networks, has remained relatively unexplored. Moreover, studies of multilateral whole networks are scarce in general (Provan et al., 2007). This study contributes to the research streams of legitimacy building in multilateral whole networks, particularly in the supply networks context, exploring the phenomenon of legitimacy building via the three pre-network and four formation phase legitimacy-building dimensions of the network. The results provide implications for the feasibility of the evaluation of the network's legitimacy.

Based on the literature reviewed in the theoretical part of the study, a framework is presented, which combines the dimensions of network dynamics and the dimensions of the legitimacy building in a multilateral whole network. The framework is a basis for evaluating the network's legitimacy-building process in the pre-network and network formation phases.

The network paradigm has been of great interest amongst researchers for the past 30–40 years and especially Western societies have been recognized to be moving towards a society of whole networks. Therefore, there is a particular need for network theories to explain, for instance the coming into being and dissolution of networks by using the “network” as a dependent variable. Despite this need, the study of whole networks or legitimacy building in whole networks, has not received much attention in the academic literature. However, based on the theoretical framework it is possible to assess the pre-network phase as well as the four dimensions of legitimacy building during the formation phase and pay attention to those dimensions that might contribute to the network either thriving or dissolving. Furthermore, in those few studies of whole network legitimacy building, especially in the context of supply networks in the pre-network and network formation phases, there is little evidence of the contingencies that affected the success and dissolution of a network.

The prior studies of network legitimacy building or their dimensions in multilateral whole networks have been carried out in different types of whole networks. The case networks of van Raaij (2006) were networks of service suppliers forming a knowledge network in health care. The case networks in the study of Human and Provan (2000) were with an NAO, containing only production SMEs not aiming at a joint product and service entity delivery, and in an industry with no experience in networking thus illustrating network legitimacy building in completely new, unknown circumstances. Valkokari's (2015a) case networks were SME networks without an NAO, with more core company driven goals than a joint delivery entity. Human and Provan (2000) have suggested that the evolution dynamics of formally constructed networks organized from scratch differ from those that emerge from previous business ties. Therefore, compared to the prior work, this study brings new information on network legitimacy building in multilateral whole networks by introducing the subject in a new mixed-sized case network setting. In this study, the multilateral whole network is formed of approximately 20 product and service providers, with both large and SME companies, formally constructed and governed by an NAO, with the goal of a consortium supply network (i.e. knowledge network) and federation supply network. The operating context of the case network is the Finnish maritime industry, whose organizations share origins and have a long tradition in networking, thus there was a strong foundation of previous business ties both on an individual and organizational level.

Three of the dimensions of legitimacy building in whole networks, i.e. network as a form, interaction and entity, were previously studied by Human and Provan (2000) in multilateral whole networks,

in which the pre-network dimensions were completely different from this case. Therefore, this study brings new information about the manifestation of these three network legitimacy-building dimensions in a new pre-network setting, which has a strong pre-network climate and legitimacy, and both internal and external preliminary support from potential key stakeholders. Additionally, this study contributes to the discussion of the overall strategic orientation of network legitimacy building during its formation phase. In Human and Provan's (2000) multilateral whole network cases, one network had inside-out and the other outside-in strategies; the present case resulted in having both inside-out and outside-in strategies, yet showed how the overall legitimacy-building strategy focused upon inside-out orientation, thus creating a knowledge network or consortium supply network archetype, owing to the choices enforced by the key stakeholders, namely the public funding body. However, within the network some organizations would have preferred more outside-in orientation and the federation supply network archetype, thus creating tension. This confirms the assumption by van Raaij (2006, p. 266), that when members participate in a network, they strive for a specific goal, which is attainable only via a network. On the other hand, the outside-in orientation and urge for federation supply network archetype also confirms the view of Kumar and Das (2007) regarding pragmatic interpartner legitimacy, which suggests that the network actors want to further their own interest while participating in a network or alliance; therefore jointly agreed network goals and legitimation orientations are vital for the commitment of the network organizations.

Furthermore, in their study, Human and Provan (2000) did not regard the dimension of the network's strategic intent as part of network legitimacy building. Valkokari (2015a), however, studied the two dimensions of strategic intent and the identity or entity as part of network dynamics, yet also covered the network form and interaction to some extent, although she did not regard them as discrete dimensions. All four network legitimacy-building dimensions of this study were covered in van Raaij's (2006) study, although she handled the dimensions under different concepts, so the norm of legitimacy included both the network as a form and the topic or the goal of the network. Therefore, this study makes a contribution to the theory of multilateral whole networks and more specifically to their legitimacy building during their formation phase. The theoretical contribution is brought about by combining and presenting a framework of four dimensions of the legitimacy building based on the prior research on the subject. In other words, from the viewpoint of the emerging network theory of whole networks, the results of this research clarify the dimensions of legitimacy building in the formation phase, specifically in whole supply networks. Furthermore, the role of strategic intent, which has been disregarded in the previous studies, is emphasized in this framework. The

contribution regarding the strategic intent in network legitimacy of this study adds to the study of Valkokari (2015a), which showed the temporal dynamics of strategic intents: the strategic intents of the network evolve and change during the early phases of network evolution. The results of this study revealed that the strategic intents of a network can also be multiple and overlapping, although the different strategic intents might be implemented asynchronously. Furthermore, the results of this study regarding the network organizations' conflicting views on the network's strategy and achievements, due to insufficiently communicated network-level strategic goals and orientations, confirm Valkokari's (2015a) recommendation of an interactive and transparent strategy formation process, which aims at joint sense-making among all network members via sometimes long negotiations. The conflicting views on the network's strategy and achievements also reveal that pragmatic, moral and cognitive network-level interpartner legitimacy was not achieved at the highest levels throughout the network. Had the interpartner legitimacy been at higher level, it would have manifested according to Kumar and Das (2007) as network participants' regarding the network to have common goals. These goals they would have considered beneficial to their organization and committed to them. Thus the network would have perceived the right thing to do, natural and necessary, not only to "hang around just in case".

Moreover, this study contributes to the theory of whole network legitimacy building, especially in the context of supply networks in the pre-network and network formation phases, by discovering and listing the contingencies that affected the success and dissolution of a network and by revealing the complex dynamics of those contingencies. Regarding the contingencies, this study brings new information, particularly on the effects that the governmental support via public funding, that adds to the study of Human and Provan (2000). In this research, the public funding had a major role in the moulding of the overall strategy of legitimacy building, as well as on the resulting supply network archetypes. Additionally, the results of this study reveal the network organizations' indifferent attitudes towards public funding: after a successful networking project, the network organizations did not find it necessary for their own purposes in the future.

Furthermore, the study also contributes to the role of an NAO, especially in the management of network interaction, thus adding to the studies of Human and Provan (2000) and van Raaij (2006). The results showed that an NAO does play a significant role as the managed network interaction enabler. In this case, when the managed interaction by NAO ceased, the interaction of the network as a whole diminished significantly, which had a detrimental effect on the development of the federation supply network.

To sum up the theoretical contributions, this study introduces a combined framework for evaluating the four dimensions of whole supply network legitimacy building during its formation phase, with the emphasis on the strategic intent. Additionally, the study introduces the contingencies identified as affecting the success and dissolution of a whole network during its formation. Particularly significant are the roles of public funding and the NAO. Public funding in particular has society-wide impacts, therefore its role as an enabling – yet also hindering – element of the formation of whole networks should be emphasized. Also, in the forming of networks, the role of the NAO and its longevity, for example regarding interaction, should be resolved early on in order to ensure the NAO's continuance past the crossroads of the network.

6.2.2 Contributions to managerial practices

This study is one of the few attempts to explore the dimensions of legitimacy building and the contingencies that affect legitimacy building in multilateral whole networks, particularly in the supply network context, during their pre-network and formation phases. Considering how the network paradigm has permeated the business world in the past 40 years, and how whole networks are considered the future modes for intentional, goal-driven collaboration for companies and organizations, the requirements for the formation of such network structures and the contingencies potentially affecting the formation, should be explored and described in such a manner that encourage companies and organizations to become involved and actively participate in whole networks.

First, in order for companies and organizations to benefit from the whole networks that they join, in the first place managers should contemplate which networks to become involved in and participate in. This might seem trivial, but even the consideration of three pre-network conditions reveals the maturity of network operations prior to network formation. In other words, the pre-existing ties between the network organizations aiming at a new whole network, the legitimacy of the industry i.e. the support of the legislators and public funding agencies, and the existence of support by potential key stakeholders are practical issues to contemplate. If all three of these pre-network conditions indicate a good level, the launch of the network formation phase may become smoother. Additionally, prior to or in the early formation phase, managers should inquire both internally and from the other participants of the new network about their experience in networking and how the network is governed as a form. Furthermore, they should ask how the interaction is to be carried out in the network for it to be frequent enough for the network to generate an identity of its own. Last,

but not least: does the network have a goal, a strategy and process to carry out the goals, are the goals multiple or overlapping; and most importantly: are the goals of the network in conflict with the goals of the company or organization, for example regarding the collaboration strategy with competitors?

After contemplating these issues, the managers have a decision to make on whether to participate in the network in full, just be present, which may not be very beneficial and appreciated by the fully participating network members, or not to participate at all. However, the results of this study suggest that the four dimensions of legitimacy building can be used as a general-level "roadmap" including the basic ingredients for the successful launch of a whole network.

As the results indicate, the formation of a whole network is not an easy assignment. There are multiple contingencies that have both pros and cons, thus the dynamics of network formation and legitimacy building seem complex. One of the key issues is to discover those contingencies and if considered negative, try to find the positive aspects that may outweigh the negative ones and work through the obstacles.

As a final suggestion for those trying to launch the formation and acting as the key stakeholder of the network: the network goals and their communication play an essential role in the network formation phase, especially in terms of legitimacy building. Therefore, communicating the network goals, particularly if they are multiple and overlapping, and the strategy process and time frame for achieving the goals, might benefit the legitimacy building as well as the network outputs, both the positive and negative. When it comes to communicating strategy within one organization, it is seldom very clear, and when the effort is made in the context of a whole network, the process becomes many times more complex.

6.3 Assessment of the research

The new scientific paradigm of pragmatism was adopted in this study due to its inherent characteristic that allows the use of various research methods, whether qualitative, quantitative or mixed methods in social research. Although the study employs mostly qualitative data from interviews, observations and their respective network documents, the quantitative data of survey and secondary data were used as supportive material for answering the research questions, too. Qualitative material is usually evaluated in term of validity and reliability. Validity refers to the

issue of whether an indicator or set of indicators, devised to gauge a concept really measures that concept, whereas reliability refers to the consistency of a measure of a concept. (Bryman, 2004). However, due to its nature, qualitative research should be evaluated by different criteria. The criteria used in this study are gathered in Table 29.

Table 29. Criteria and explanations for evaluating the case study

Criteria for evaluating case study	*Explanations for the case study evaluation criteria*
1. Originality	Idiosyncrasy (van Maanen et al., 2007). Own making, using own ideas, words, and data, i.e. a study that has not previously been carried out (Yin, 2011).
2. Transparency and specificity: Description of methodological procedure	Description of the methodological procedure underlying the case study (Dubois and Gadde, 2014). Explaining the research design, the process and the methods for data analysis, i.e. transparency (Piekkari et al., 2010). Specificity (van Maanen et al., 2007).
3. Theory as common thread	Presentation of the case study and its relation to theoretical concepts Dubois and Gadde (2014).
4. Generality	Collecting multiple instances of process data (Woodside, 2010).
5. Accuracy	Re-interviewing the same informant during and after observing the process or by doing multiple individual interviews of different informants during and after the observing the process, and applying method triangulation (Woodside, 2010).
6. Complexity	Complexity (van Maanen et al., 2007) can be overcome by e.g. adopting systems thinking (Woodside, 2010).
7. Concise, selective writing	Highlighting the important parts of the case (Dubois and Gadde, 2014).
8. Reflexivity	Paradigm consistence, i.e. acknowledging whose views on good case study the researchers are following and sticking to them (Dubois and Gadde, 2014).

The principal objectives for case research, for which the researcher can apply various methods, according to Woodside (2010) are generality, accuracy and complexity/coverage, whereas van Maanen et al. (2007) also highlight the originality of the case. Dubois and Gadde (2014) suggest two objectives: theory as the common thread, and methodological rigour (Dubois and Gadde, 2014, p. 1282), which Piekkari et al. (2010) call transparency and van Maanen et al. (2007) specificity. Additionally to the above-mentioned, Dubois and Gadde (2014) and Siggelkow (2007) suggest a

concise, selective approach to case writing, along with reflexivity by Piekkari et al. (2010). For the evaluation of the qualitative part of the study, these eight criteria were adopted (Table 29).

The eight criteria listed in Table 29 were manifested in this research. The essence of this research is a case, which is studied with the non-linear, non-positivist, abductive research approach of systematic combining. Regarding originality, the case was an original, rich single case. The originality of this case study is derived from four issues. Firstly, the case was the author's own effort, with data collection from multiple interviews, survey, observations and documentation, although the author was assisted in most of the face-to-face interviews by another interviewer. In addition, all the data analysis and reporting has been solely carried out by the author, including all the presentations of tables and figures of this dissertation, unless specifically referenced or otherwise notified as a production of someone else. Neither does this study replicate any previously carried out case study. Secondly, this case study has not been reported previously in the literature. Thirdly, altogether, there are not many cases of whole networks reported in the literature (cf. Kenis et al., 2009; Provan et al., 2007), thus all of them are original per se. Fourthly, this whole network under study had a few characteristics, such as the network construct and pre-network conditions, that separate it from similar kinds of prior studies such as that by Human and Provan (2000). However, originality does bring its own problematics. As there are no similar cases to compare against, principally the contribution of such case studies is mainly empirical. However, that is not necessarily a disadvantage, as original case studies do bring new knowledge to the understanding of complex phenomena, such as networks and whole networks in particular. Therefore, it can be determined that this case study meets the assessment requirements regarding originality.

The transparency and specificity of this case study can be reviewed from multiple angles. Here, transparency is viewed through the following aspects: case selection, the dual role of the researcher, the methodological procedures, i.e. the role of theory, research design, process and the methods for data collection, analysis and reporting. First of all, regarding the transparency of the case selection, it was disclosed that the networking case was presented to the author to be studied, not the other way around. However, as the author did have prior experience in research in a network environment, it was part of the expertise to comprehend that the presented case was idiosyncratic and worthy of more thorough research than data collection, as well as analysis and reporting at a general level for project use, which were the project manager responsibilities assigned by the NAO. In that sense, the researcher's identity did have an influence, particularly on the process of data collection. For example, the data was collected systematically, and besides interviews, other data collection

methods, i.e. a survey, was used, which no other NAO member had the expertise to carry out or analyse.

Therefore, after the projects at the NAO ended, the more thorough analysis from the scientific perspective of the case material started. Also, as revealed in section 3.3. Research design and in section 4.5.1. Actions and credibility of Network Administrative Organization (NAO), the author did have a dual role regarding this case first as a project manager at the NAO, carrying out the research tasks of data collection and preliminary analysis, and then as a researcher at the university. Naturally, a dual role always presents potential challenges to researchers. However, when a large body of research material gathered during 3 years is under study, it is difficult to convey all the tacit knowledge to another researcher. Therefore, the tacit knowledge of the case accumulated as project manager during the process probably influenced the choice of the legitimacy building as theoretical framework. For example, had the networking project been a total failure, with lack of interest or interaction between the network organizations, that would have spawned a different type of research questions. Unfortunately, during the data collection and analysis there was no opportunity to apply e.g. researcher triangulation as widely as one would desire. On the other hand, as the scientific analysis of the case was carried out and completed after the networking project had ended, there was time for the researcher to distance herself from the case and view it via the chosen theoretical lens.

In general, involved researchers have a tendency to present their cases more positively than they actually are. However, in this specific case, the author had no particular gain in doing so. In fact, from a scientific viewpoint, as there are very few reports on whole network failures, project failure might have yielded scientifically more interesting results. Furthermore, presenting the results of a whole network legitimacy building case in an overly positive or negative light does not affect e.g. public health or economics, which an individual researcher could have a personal stance on. Therefore, in this case, the aim of the author as researcher has been to present both the positive and negative perspectives of a networking case in as objective a manner as any other less involved researcher would have done.

When reflecting on the influence of other participants on this research project, the key stakeholder, especially the project leader did influence the data collection process. As the project plan was his original creation according to his personal vision, he was accordingly personally invested in its completion, too. His personal network amongst the network organizations enabled access to the

organizations and most likely also positively influenced the network organizations' interest in joint interaction. However, there are so many projects around these organizations, that they do not participate unless they feel they will gain from the project. Also, the project leader did give opinions and support when the surveys and interview rounds were being planned. However, he did not involve himself in the analysis or reporting of the data, besides approving the author's work.

The researcher's dual role puts additional strain on the transparency of the research. Therefore, in this dissertation, extra effort has been placed on transparency in the following aspects: the methodological procedures, i.e. the role of the theory, research design, process and the methods for data collection, analysis and reporting.

A case study carried out with systematic combining allows the researcher to let the "data converse with the theory". That means, not making the decision of theoretical framework or utilized concepts prior to the data collection, but an abductive process, narrowing the options down in the course of the research as the case evolves. Although, in this case study, the major turning points of the abductive process were described as transparently as possible, naturally some thoughts and ideas that sidetracked the author are not reported in this dissertation. Moreover, in this research process, legitimacy as a choice for theoretical framework was appealing to the author and was considered already early on. As the snowballing of the main network literature showed up a research gap regarding legitimacy in whole networks and particularly legitimacy building, therefore, a systematic literature review was chosen as an additional mechanism to yield more relevant literature. In fact, systematic literature reviews are often carried out to make sure that no major concepts related to the research topic are disregarded. However, although a systematic literature review does provide an organized method for discovering the relevant literature, as an instrumental approach it leaves out the opportunity to run across and apply concepts and ideas that are more distant from the core literature of organizational and network legitimacy. Thus, these non-core concepts of network literature could have provided a window for exploring the case in a theoretical framework that would have provided broader and more significant results. Therefore, although the theory of legitimacy in the network context has provided an evident research gap, and the theory has been used as the common thread of the single case study in this dissertation, concepts such as ecosystems, e.g. innovation or business ecosystems (Basole et al., 2015; Dedehayir and Ortt, J Roland; Seppänen, 2014; Dedehayir and Seppänen, 2015; Still et al., 2014; Valkokari, 2015b) could have provided a novel theoretical framework for case research.

As the transparency of choosing the theoretical concepts and framework is as transparent as it can be in the abductive process of systematic combining, the different stages of data collection by the author with interviews, survey, observations of board meetings, workshops and customer events, were described in detail, particularly, the researcher's presence together with the attendance of other people in interviews. Also, the interview themes and survey questions used have been listed in the dissertation as an appendix. Additionally, the production of Board meeting memos and network project strategy reports, which on the other hand were used as research material, have also been thoroughly portrayed. It is noteworthy that, had there been any inaccuracy in the collected and reported data during the network project, it would have been detected by multiple stakeholders. Also, the additional documents used as research materials have been presented.

In addition to the data collection, the transparency of data analysis was also aimed at by listing the particular research material used and their related codes utilized in data analysis as well as secondary data next to the discovered results. Besides, the quotes that led to the major results have also been presented quite extensively. Due to this rich representation, the reader can easily follow the path to reaching the results. Additionally, the listing of all the codes used, in interviews and coding the documents, is found in the appendix. Therefore, in this dissertation, the entire process from research design and research questions via data collection and analysis to the results is transparent and could be detected with the original data or repeated in another setting. Moreover, the freedom of the case study approach has been taken advantage of, while balancing it with a transparent explanation of how the network under study came about and the emerging research design, which to some extent in this case developed after the three-year networking project had ended. Thus, the presentation of the qualitative research can be considered transparent.

Generality was one of the fortes of this research. The generality of this case research was achieved due to the network organizations' interest in contributing to this particular networking project. The interest of the network companies created great access to the companies and almost each of them participated in the most crucial network events, such as interviews. Thus, generality in this case signified multiple instances of gathered process data, i.e. almost all of the whole network organizations were interviewed in each interview round and all the network workshops and meetings were observed. Generality may not be a prerequisite for understanding a case, but with multiple instances of gathered process data, a researcher has the opportunity to derive network-wide results

from the network organizations, thus making at least somewhat valid conclusions of the network. Without generality, a network research is just individual opinions in a group of organizations.

As the accuracy of the case study is regarded as a fundamental issue, in this case accuracy was achieved by using multiple data gathering methods. First, there were multiple individual interviews of different informants, i.e. over 20 in each round, and the same companies with mostly the same informants were re-interviewed three times. Secondly, the process was also observed and method triangulation (Bryman, 2004, p. 275) applied, e.g. the second data collection round was carried out with both a survey and an interview. Thirdly, documents were also used as research material. Thus, triangulation amongst data sources, i.e. data triangulation, was utilized. There are also other types of triangulation, of which researcher triangulation was not used per se, but in most of the interviews, there were two interviewers present and all the interviews and survey questions were reviewed by at least two people and the network documentation, e.g. the four reports, were reviewed by multiple people and circulated to all network organizations. Thus, the generality together with the accuracy of the research allowed the case material to be rich and credible, however vast. When this achieved generality and accuracy of a 3-year long project with over 20 participating organizations is combined with the demand and criteria of concise selective case writing, i.e. highlighting the important parts of the case (Dubois and Gadde, 2014), the researcher is faced with "an embarrassment of riches". In other words, such a vast collection of research material produces overabundance, which when reported fastidiously and with exact boundaries drawn from the theoretical framework, demands a balancing act. The balance has to be found between highlighting the important parts of the case from the theoretical framework perspective and writing a stimulating description. Therefore, emphasizing the first might hamper the latter, i.e. make the report fall a bit flat or lifeless. Therefore, in order to make the results of this dissertation more engaging, an ethnographic inspired presentation of the results was adopted to some extent; but then again, some readers may find the quotes confusing.

Due to its length and subject of a network with multiple participants with high intensity of collaboration producing an overabundance or material, complexity was an undoubtable characteristic of the case study of this dissertation. Systems thinking is provided as a way to handle complexity in case studies. According to Senge (1990), in systems thinking, the parts influencing a complex system and the output of their actions are described. The aim is not to divide the system into parts, but to understand how the parts affect the whole. In that sense, this case study was systems thinking inspired by trying to understand what happened and why, and what the outputs of the three-

year networking project were and how the organizations perceived it. Case studies are regarded as complex in general; moreover qualitative studies of networks have a particular character of complexity. This is due for instance to the issue of the unit of analysis. As the networks do not respond themselves, nor do the organizations within them, so the answers to research questions have to be received from single individual informants representing their organizations. Then these organizations are representatives in the network. Therefore, one could ask, are the individual responses, although firsthand actors and contributors in a network, representative enough for network-wide results to be drawn in general.

Reflexivity requires that the researcher acknowledges and understands the views on a good case study and sticks to them. Therefore, the seven above-mentioned criteria have been used for evaluation in this research and are described here in detail.

According to Schwandt (2001, p. 15), bias is the first of a two-fold tendency. In research, it prevents unprejudiced consideration or judgement. In this research, the aim was to avoid this by the author's not being previously acquainted with any of the network organizations or their informants. For researchers, there is also a tendency to be unaware of how one's interactions in the field affect behaviour and result in a prejudicial account of social behaviour at the site. From the informants' viewpoint, as they were both the acting participants and decision makers within the network, the opinions they presented in interviews may have been biased more positively than the reality actually was. However, as the network was not the company the informants represented, they were also quite unanimously critical towards the collective outcome of the networking project. From the author's viewpoint, the dual role as part of the NAO personnel enabled more frequent interaction with network organization members during the project than perhaps an outside researcher would have, thus as the researcher of the case, this interaction may have interfered with the neutrality and objectivity of the study, by creating a bias for interpreting the results more positively than the reality. Yet, in this study, the author's role as researcher regarding the project was more of a facilitating observer role, rather than a decision maker. Therefore, as a researcher, the author did not evaluate any of her own decisions or output, but the accomplishments of the case network, which can be verified by others. In addition to these two tendencies, bias is a combination of individual preferences, predispositions or predilections that prevent neutrality and objectivity, which may be caused by an a priori theoretical framework or interpretation of the data. In this study, the theoretical framework emerged after the three-year project was complete, therefore the theory itself did not

cause any predisposition. Also, legitimacy building in a network as a subject is quite neutral and impersonal. Naturally, bias can also happen while reviewing the studies, in the coding of the attributes and grouping them into categories by a solo researcher. The shortage of literature regarding legitimacy and legitimacy building in networks may naturally direct the research to certain known tendencies. Yet, having only very few previous results also hinders the cause for bias inflicted by literature and prior result. Bias in coding may appear when the coding is done after being involved in the case network and knowing e.g. what the end result was. Therefore, it would be beneficial for the coding to be done by multiple researchers, or at least more than one, with researcher triangulation. However, in this case study it was not applied.

As the philosophical positioning of this research was pragmatism, the biases of both the informants and the researcher do not disqualify the results of this case study, yet they have to be acknowledged. In the assessment of generality, in each of the interview rounds, the participation percentages were notably high, 90 % or over (of the participating 20–26 companies), therefore the biased opinion of one informant or company does not affect the overall network level results to significant extent. Also the author's role as an actor in the network project, although in a researcher role, was presented. However, pragmatism allows researchers to be involved and interpret the results, while aiming to understand the phenomenon at hand.

For a quantitative study, several types of validity can be used for its assessment. Validity, particularly measurement validity, refers to the issue of whether an indicator or set of indicators devised to gauge a concept really measures that concept. Measurement validity, or construct validity, applies primarily to quantitative research and to the search for measures of social concepts. Reliability refers to the consistency of a measure of a concept. (Bryman, 2004). The quantitative part of this research, i.e. the survey, was not designed to create or test social concepts, but to find out background information and the needs of the network organizations for the capability-building strategy. The phenomena under study were fairly simple. Therefore, the survey was constructed for those purposes and the results of the survey were also confirmed with an interview afterward, i.e. using method triangulation. Therefore, validity value calculation for the survey results was not performed.

6.4 Limitations of the study

As with any other research design, case studies have their relative strengths and limitations. This study was an intensive single case study, where instead of the researcher selecting the case, the case selected the researcher. This section presents the limitations of this study to the reader. However, instead of treating the limitations as a mere shortcoming in the study, they may also yield an array of potential further research topics.

The first limitation of this study is the selected research strategy. Case studies, in general, have been criticized for their "real-life" dimension, due to which they have been stigmatized as anecdotal descriptions without scientific rigour (Eriksson and Kovalainen, 2008). A single study is always a limited view on the subject. However, based on the results of the study, this case introduced a new framework and network settings that can be evaluated systematically with other network cases. Additionally, as a whole network case, this was a rich source of data as the participating organizations became very involved in the network project, which cannot be taken for granted.

There are also limitations regarding the methods used in the study. As a mainly qualitative case study, most of the data that was collected originated from interviews of the managers in the network organizations, i.e. self-reported data, which may be biased by selective memory, telescoping, i.e. recalling that events occurred in another time than they actually did, attribution and exaggeration by the interviewees. However, as the network organizations were very active in this network and access to them was at a high level, i.e. each of the interviews had almost 90% participation, therefore the coverage diminishes the effect of one interviewee's bias. Furthermore, as the author was acting in a dual role: first as an actor in the NAO, although carrying out research tasks, and later on as a researcher of the same case, the views as researcher may be biased with the earlier, more involved role with the network organizations, which may lead to viewing the results in a more positive light.

Also, the literature on network legitimation, particularly legitimacy building in whole networks, is quite limited, due to the lack of prior research studies. This is quite natural, as whole networks themselves are rare, quite laborious and time-consuming subjects; longitudinal studies require commitment from both researchers and network organizations. Although there is a lot of research on legitimacy in organizations, compared to organization studies, network studies as a research stream is still in its infancy.

In their study Human and Provan (2000) carried out a calculation of network density. That is one measure that was not carried out in this study, due to the prior connections of the network organizations and people in them. However, in retrospect, the calculation of network density might have provided interesting results about the network, which could have been compared to the prior studies.

The data collection of the study was time-limited to the three-year networking project, which may be fairly short in terms of network lifetime and even network formation. Yet the three-year period provided a suitable time frame for completing data collection when the network was interacting according to a predefined plan. Also, the fact that the researcher was able to access the network in the early phase, when the actual network interaction was starting, was a fortunate coincidence.

Triangulation was used in this study by using multiple respondents and data sources, and also by getting people involved in the drawing up of interview themes and questions. Naturally, other triangulation possibilities could have been used to complement data analysis.

The research context is also limited to the context of Finnish maritime companies, which brings a certain cultural and industry bias to the study of network legitimacy building. Norwegian maritime companies are very well connected and networked and also benefit from their existing domestic markets (INTSOK, 2015), thus researching the subject of network legitimacy building in whole networks in the Norwegian oil and gas industry context could potentially raise interesting viewpoints. Also, whole networks in completely different industries could shed light on the concept of whole networks and their legitimacy building and thus feature cases for further research.

Another context-specific limitation was the fact that the interviewees were only taken from the network organizations. The other stakeholders, apart from observations in two joint network workshops with potential customers, were mainly limited out of the scope as the focus was on the network organizations. However, other stakeholders may bring another external perspective to network legitimacy building.

When the timeline of the data collection of this research is viewed in the light of the general economic situation in terms of the price of crude oil, it can be noticed that the three-year period 2010–2013 occurred during the high oil price window. The crude oil price in December 2010 was 91.4 USD/bbl, peaking in March 2012 at 125.4 USD/bbl and falling again in March 2013 to USD 109 USD/bbl (Biopolttoaineala, 2016). Therefore, the case study was limited to the good times in

the upstream oil and gas industry, thus making it an interesting market to enter, especially as the cruise ship markets were then low (Yle, 2012). However, the market situation changed drastically in January 2015, when the price of crude oil dropped to USD 50/bbl. However, this market collapse was not anticipated during the three-year networking project period, thus potentially giving a positive bias to the views of the network organizations.

6.5 Recommendations for further research

Based on the findings and limitations of the study, some suggestions for further research can be proposed. As mentioned before, there is a lot of research on legitimacy in organizations, yet there are only a few reported studies on legitimation building in multilateral whole networks. Therefore, as legitimacy in the organizational setting has drawn a lot of research attention, it could be suggested that the further research of legitimacy building in whole network setting would also be an important subject for future studies. Since this is one of the few attempts to study whole networks in general and legitimacy building in whole networks specifically, there are still several issues and contexts to be explored in order to gain a comprehensive understanding of the phenomenon. Longitudinal studies regarding the subject would be particularly beneficial.

In this study, the framework of four dimensions of legitimacy building of a whole network in its formation phase was introduced and evaluated in one case study. Therefore, the framework could be further applied and evaluated, potentially in multiple case study environments.

Out of the four dimensions of legitimacy building during the whole network formation phase, strategic intent in particular needs more focus. For goal-directed networks, strategic intent is an inherent dimension in a multilateral whole network; therefore its role and impact in legitimacy building should be further studied. Moreover, the dynamic character of the strategic intent in the legitimacy building of whole networks should be taken into account. The study of Valkokari (2015a) revealed the temporal dynamics of strategic intent, i.e. the strategic intents of the network evolve and change during the early phases of the network evolution. The results of this study revealed that the strategic intents of a network can also be multiple, overlapping and even asynchronous.

Whole networks have been conceptualized as a phenomenon, but as the case network of this study had a voluntary and bounded membership, yet membership and its boundaries were not clearly

addressed in prior studies, the need arose to clarify the membership and boundaries of a whole network and in its definition.

The results of this study revealed that there was some incoherence in the ways the network organizations viewed the results of the network project and network as a whole. Therefore, the dynamics of coherence should be studied further, particularly regarding strategic intent and its development, especially when there are multiple intents, overlapping and asynchronous. In particular, it would be interesting to study whether coherence regarding strategic intent is a desirable state for whole networks. Furthermore, if the views regarding the strategic intent of whole networks are incoherent, would it not be natural for a larger network to split into smaller, more coherent groups?

Pathak et al. (2014) have themselves evaluated that their model of supply network archetypes is not exhaustive. The results of this study revealed that the goals of this case network gave indications of two supply network archetypes, i.e. consortium and federation. Although archetypes are merely representations of main types of supply networks, however the result that the case network represents two archetypes raises the question of whether the model of Pathak et al. (2014) is missing a hybrid archetype. The missing archetype would combine the characteristics of the consortium and federation archetypes. Therefore, further research on supply network archetyping should be carried out.

The case network organizations envisioned a new hybrid type of network governance form based on the project service agreement model. The current literature on network governance forms by Provan and Kenis (2008) does not present a corresponding model per se, therefore the existence of such a model in real life and its characteristics could also be researched, which would add valuable new information on network governance.

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Appendix 1 Themes of the interviews and survey questions

Themes of the first interview of the Strategy 1 phase

General

1 Description of company's business
2 Customers and customer groups
3 Target markets
4 Sales arguments

Collaborative product of Finnish offshore industry

1 Current supply and customer (of company)
2 Ideal future supply
3 Customer of ideal future supply
4 Sales arguments of ideal future supply

Networking amongst NWP

1 Key partners in collaborative product
2 Capabilities of taking and sharing supply scale and responsibility
3 Potentiality to collaborative development
4 Competitive situation

Networking within target market industry (Russia and/or Brazil)

1 Current presence
2 Readiness for local production
3 Forms of potential local production (JV, licensing, subcontracting etc.)
4 Potentiality of joint presence with NWP partners

Subcontracting from Finnish SMEs

1 Subcontractors in most cases
2 Requests for subcontractors

Survey form of Strategy 2 phase

There are 24 questions in this survey

Background information of the organization

Name of the organization*
Your answer:

My organization is *
Choose one of the following:

- ○ Independent company
- ○ Finnish branch of an international corporation
- ○ Other

Main field of the organization *
Choose one of the following:

- ○ Maritime
- ○ Engineering works
- ○ Information technology
- ○ Shipyard
- ○ Offshore industry
- ○ Design and consulting
- ○ Other

Turnover of your organization *
Choose one of the following:

- ○ <1 MEUR
- ○ 1-10 MEUR
- ○ 10-100 MEUR
- ○ 100-1000 MEUR
- ○ >1000 MEUR

Turnover of offshore business of your organization *
Choose one of the following:

- ○ <1 MEUR
- ○ 1-10 MEUR
- ○ 10-100 MEUR
- ○ 100-1000 MEUR
- ○ >1000
- ○ I don’t know

Number of personnel *
Choose one of the following:

- ○ 1-10 persons
- ○ 10-100 persons
- ○ 100-250 persons
- ○ 251-1000 persons
- ○ >1000 persons

Personnel working in the offshore business within your organization *

Choose one of the following:
- ○ 1-10 persons
- ○ 10-100 persons
- ○ 100-250 persons
- ○ 251-1000 persons
- ○ >1000 persons
- ○ I don’t know

Role of the organization in the supply chain *
Choose all applicable:
- ☐ Total supplier
- ☐ Design supplier
- ☐ Project management
- ☐ Material supplier
- ☐ Component supplier
- ☐ Subcontractor (installation, painting, machining, etc.)
- ☐ Other:

Personnel for capability building
Personnel requiring offshore training in our organization *
Choose the most applicable:

	Totally agree	Somewhat agree	Somewhat disagree	Totally disagree	I don’t know
Management	○	○	○	○	○
Middle management	○	○	○	○	○
Design personnel	○	○	○	○	○
Production personnel	○	○	○	○	○
Others	○	○	○	○	○

Personnel requiring offshore training in our organization have a basic education of *
Choose the most applicable:

	Totally agree	Somewhat agree	Somewhat disagree	Totally disagree	I don’t know
MSc	○	○	○	○	○
Master diploma	○	○	○	○	○
Engineers	○	○	○	○	○
Technician	○	○	○	○	○
Other	○	○	○	○	○

Amount of personnel requiring offshore training in our organization is approximately *
Choose one of the following:

- ○ 0
- ○ <10
- ○ <30
- ○ <50
- ○ >50
- ○ I don't know

The goals and content of the training
The 100 participants of the "Introduction to Offshore" course have indicated in a survey that the following three themes would be the most popular subjects for additional courses. In your opinion, what would be the necessity of the topics regarding the training needs of personnel in your organization *
Choose the most applicable choice:

	Very much	Much	Little	Very little	Not at all
Floating, Production, Storage and Offloading (FPSO) vessels	○	○	○	○	○
Drilling; machinery, methods and action, drilling area arrangements etc.	○	○	○	○	○
Logistics of a megaproject from offshore viewpoint (including supply vessels)	○	○	○	○	○

Evaluate the training need type of the personnel of your organization regarding the following themes *

Choose the most applicable choice:

	Tailored training	Continuing education type training	Degree education	Other	I don't know
Logistics and transport systems	○	○	○	○	○
Procurement	○	○	○	○	○
Sales and marketing	○	○	○	○	○
Quality management (incl. standards etc.)	○	○	○	○	○
Safety technology	○	○	○	○	○
IT	○	○	○	○	○
Supervisor training	○	○	○	○	○
Introduction to oil and gas knowledge	○	○	○	○	○
Geology	○	○	○	○	○
General project management	○	○	○	○	○
Project software training	○	○	○	○	○
Material technology	○	○	○	○	○
Production technology	○	○	○	○	○
Oil drilling technology	○	○	○	○	○
Practical operations in offshore platforms and vessels	○	○	○	○	○
Other	○	○	○	○	○

Degree education should be *
Choose the most applicable choice:

	Totally agree	Somewhat agree	Somewhat disagree	Totally disagree	I don't know
Vocational degree level	○	○	○	○	○
University of Applied Sciences degree level	○	○	○	○	○
University degree level	○	○	○	○	○
Upgrading degree level (e.g. from technician to engineer or engineer to MSc)	○	○	○	○	○
Aiming at completely new degree	○	○	○	○	○
Something else	○	○	○	○	○

Continuing training should be *
Choose the most applicable choice:

	Totally agree	Somewhat agree	Somewhat disagree	Totally disagree	I don't know
Short courses	○	○	○	○	○
Longer course packages	○	○	○	○	○
Internet training	○	○	○	○	○
Practical training	○	○	○	○	○
Combination of practical and internet training	○	○	○	○	○
Practical training as inter-company exchange of professionals/experts	○	○	○	○	○

Research projects
Our organization has participated in research projects the last 5 years *
Choose the most applicable **one**:

○ 0
○ 1-5
○ 6-10
○ 11-15
○ 16-20
○ Over 20

Currently our organization is participating in the following research projects
List as follows:

1
2
3
4
5
6
7

Our organization would have interest in participating together with network partners in the research projects regarding the following themes:
List as follows:

1
2
3
4
5
6
7

Background information
Sex of the respondent *
Choose either of two:

- ○ Female
- ○ Male

Age of the respondent *
Choose one of the following:

- ○ -29 yrs.
- ○ 30-39 yrs.
- ○ 40-49 yrs.
- ○ 50-59 yrs.
- ○ 60- yrs.

Education of the respondent *
Choose one of the following:

- ○ Vocational education
- ○ Degree from University of Applied Sciences
- ○ University degree
- ○ Other

Working experience of the respondent *
Choose one of the following:

- ○ 1-5 yrs.
- ○ 6-10 yrs.
- ○ 11-15 yrs.
- ○ 16-20 yrs.
- ○ 21-25 yrs.
- ○ 26- yrs.

Position of the respondent within the organization *
Choose one of the following:

- ○ Senior management/owner/entrepreneur
- ○ Middle management
- ○ Expert
- ○ Clerical worker
- ○ Other

Permission to use my responses anonymously in research use: *
Choose one of the following:

- ○ Yes
- ○ No

Thank you for your responses.

Theme interview themes of Strategy 2 phase

Theme: Training needs of network organizations for capability-building strategy

Capability-building strategy

1. **Based on the results of this study, which includes both a web-based survey and this telephone interview, the network's capability-building strategy to serve the entire network as well as possible will be formed according to the project plan.**
   i) What expectations does your company have for the capability-building strategy of the network?

Personnel groups that have training needs and partners for training

2. **In the results of the web-based survey of training needs, it became clear that particularly middle management, but also top management and design personnel are the personnel groups that have the most training needs in the offshore branch.**
   ii) What type of capabilities or knowledge does your management require of the offshore branch?
   iii) What type of capabilities or knowledge does your middle management require of the offshore branch?
   iv) What type of capabilities or knowledge does your design personnel require of the offshore branch?

3. **In the results of the web-based survey of training needs, it became clear that, out of the various educational groups, particularly engineers, and also MScs and technicians had training needs regarding the offshore branch.**

   The NAO is currently co-operating with Satakunta University of Applied Sciences (SAMK) and Turku Universtiy of Applied Sciences (TuAMK). Additionally, collaboration with Tampere University of Technology (TUT) at Pori has been intensified and a joint educational project is being planned.
   v) From the perspective of your company, what is your opinion regarding these collaboration partners?

   vi) Would you like to receive further information of the educational offerings (educational themes, major and minor subjects) of these universities?

   vii) From the perspective of your company, what should the collaboration with the above-mentioned universities include, for example regarding training themes or arrangements, such as the location of the training?

   viii) From the perspective of your company, how do you view the collaboration needs with Aalto University?

(1) If the answer is positive: What potential educational themes with Aalto University you would propose?

ix) In your opinion, should Aalto University establish itself in Satakunta, Southwestern Finland in order for the collaboration to be implemented in practice?

x) In your opinion, should other educational institutions be taken into consideration while developing an educational collaboration network?

(1) If the answer is positive: Which educational institutions would you name?

xi) From the perspective of your company, how necessary do you find increasing collaboration with universities abroad?

(1) If the answer is positive: which universities abroad would you name for collaboration?

xii) From the perspective of your company, how important do you consider the creation of an offshore professorship in Finland?

(1) If the answer is positive: in which city or area should the professor physically be located?

xiii) How important do you consider that the proposed training would include participation or lecturing by foreign experts?

xiv) How important do you consider that the trainees would be able to participate in distance learning or Internet-training sessions?

4. **In the results of the web-based survey of training needs, it became clear that the quantities of personnel requiring training was quite small, in other words, only individual people need training.**

xv) Does the training need for the offshore branch arise from the internal needs of your company or external needs from the environment, such as from customer needs?

xvi) Do you think that the quantity of personnel needing offshore training would increase if the network participated in a concrete tender process for example in Russia or Brazil?

xvii) Do you think that the quantity of personnel needing offshore training would increase if there were more and more versatile training on offer?

5. **People with offshore training needs and collaboration partners**

xviii) Would you like to comment further on the people with offshore training needs within your company, or current or potential education collaboration partners?

6. **So far the network has arranged one workshop, where the participants were corporate management.**

   xix) In your opinion, should the network also coordinate education or seminar events for other participants than company management, for the sake of networking?

   xx) Do you think that there would be participants in your company for such joint education and seminar events?

Training arrangements in practice

7. **In the results of the web-based survey of training needs, it became clear that considering the three themes of offshore, in some companies, one of the themes was above the others regarding its necessity, and in some companies all the three themes were seen as equally relevant.**

   The themes were:

   - Floating, production, storage and offloading FPSO vessels
   - Drilling equipment, methods and operations, drilling arrangements etc.
   - Logistics of megaprojects from the offshore viewpoint (including supply vessels)

   xxi) In your opinion, what detailed information would you include in one of the themes?

   xxii) What other themes would you include as important for your company in the future?

8. **In the results of the web-based survey of training needs, in particular basic knowledge on oil and gas was needed with continuing education on types of execution. Surprisingly, particularly sales- and marketing-themed continuing education was requested.**

   xxiii) In practice, which type of sales and marketing training do you believe your personnel require?

   xxiv) From your company's perspective, would you request a sales and marketing seminar or workshop, which would deal with for example the business culture and customs of the target country i.e. Russia and Brazil?

9. In the results of the web-based survey of training needs, it arose that degree education did not play a significant part in the education types of various themes. When degree education was particularly requested, mostly support was received from University of Applied Science level education, but surprisingly half of the organizations considered upgrading qualifications (for example from technician to engineer or from BSc engineer to MSc) to be a favourable alternative.

Next semester the NAO will arrange an introduction to offshore operations course for engineering students in collaboration with SAMK and TuAMK. Additionally, the NAO has discussed with Tampere University of Technology in Pori the possibility of creating a minor in offshore operations as part of the upgrade education programme in the industrial engineering department.

xxv) In your opinion, from the capability-building viewpoint of your company how necessary do you find the upgrading education from BSc engineer to MSc in Engineering?

xxvi) From the capability-building viewpoint of your company, how necessary do you find the upgrading education from technician to engineer?

xxvii) From your company's viewpoint, would you consider it necessary that discussions also regarding offshore minors in engineering education would be opened with Universities of Applied Sciences?

xxviii) From your company's viewpoint, would you consider it necessary that discussions also regarding offshore minors in technician education would be opened with Universities of Applied Sciences (SAMK)?

10. **In the results of the web-based survey of training needs, it became clear that short courses were clearly the most popular form of education. Practical training was also surprisingly popular.**

xxix) Would you consider that your company would participate in a regular exchange programme, in which personnel of willing organizations would take part in training or an expert exchange period for example for a few weeks in a mutually agreed network organization?

xxx) With which network companies would you consider your personnel participating in an exchange programme?

xxxi) How would you consider that the NAO should operate as a coordinator and creator of an exchange programme where:

(1) The personnel of the willing organizations would participate for example in a one-week training period in a jointly agreed network organization

(2) The personnel of the willing organizations would participate for example in few weeks' of expert exchange in a jointly agreed network organization

11. Training in practice

xxxii) Would you like to comment on the education arrangements in practice?

Strategy 3 phase themes for interviews

I. **Feedback on networking project and network**

1. On a score of 1–10, how satisfied has the company been with the networking project so far?

2. In your opinion, has the network achieved the goals of the project so far?
   - Which of the goals have not been reached?
   - Has the network achieved something beyond the original plan of the networking project?

3. Has your company achieved the goals it set for the network so far?
   - Which of the goals set for the network have not been reached?
   - Has your company achieved something with the network beyond your company's original plans?

II. NETWORKING

Here 'network' signifies a long-term relationship of more than two organizations, which exists prior to a commercial contract.

a) The network portfolio, strategy, capability and roles and the structure and partners of a future network

4. Is the offshore business part of the organization's written strategy?
5. Is networking part of the organization's written strategy?
   a. If so, what does the organization aim for with networking?
      - Is networking an active or passive part of corporate strategy?
   b. If not, why is networking not part of the written corporate strategy?

6. Does the organization have a specific network/networking strategy?
   a. If so, describe the content of the network/networking strategy (for instance: internationality: Finland vs. international partners; suppliers, subcontractors, customers and competitors)
      - Does the organization implement the written strategy? Is the implementation monitored with indicators?
      - Which principles does the organization comply with within its network (values, rules, contract policy, scale, dependency, relations)
      - Which part of the competitive strategy does the partnership or networking especially support or deal with (e.g. price competitive advantage, differentiation, capacity)?
      - What types of roles does the networking strategy include? Is being a focal company for instance one of them?
      - What kind of entity is formed by the networks of the organization?
        - Are those organizations named in the network strategy, with which collaboration is now carried out or not? Are those organizations/institutions named, with whom collaboration is sought in the future?

   b. If the organization does not have a specific networking strategy, would there be a need for one?
      - What kind of networking strategy would it potentially be?
      - What kinds of roles would the networking strategy have, for instance, would being a focal company be one of the roles?

7. In what types of networks does the organization operate now (e.g. customer, competitor, supplier, subcontractor)?

8. From a structural point of view, in what types of networks does the organization operate now (hierarchical/partnership etc.)?

9. Does the organization currently operate as a focal company in some networks?

10. In general, which network roles are the strongest for the organization? Why?

11. In the future, with which types of organizations would the collaboration of the organization be carried out (R&D, production, marketing…)?

12. Should other organizations, such as universities and/or research institutes also be added to the network?

13. Does the organization aim to expand its network collaborations in the future?
    a. If so, with which types of enterprises or organizations?
    b. If not, why?

b) The vision of the organization as a strategic network and future actions

14. Does the organization regard participation in this networking project as part of the organization's networking strategy?

15. What is the organization aiming at with the potential future strategic network after the networking project?

16. In which roles in the future network would the organization be strongest? Why?

If there was a focal company in the network:

17. What kind of product (may also include a service entity) would the potential future network supply to the customer in the target market (if the organization were the focal company) i.e. what would be the business idea of the network (from the view of the focal company)?

18. What type of network structure should the network create (networking pictures)?

19. Would the network project demand a new type of view to the current networking strategy of the organization (e.g. focal company – subcontractor – setting)?

20. What new aspect would the organization bring to the future network (e.g. product ideas/processes/management/structure/financing models)?

21. What complementary capabilities would the other network partners offer? What does the organization require from others as complementary capabilities? E.g. sales and marketing customer relations, R&D, production techniques, logistics, financing…

22. What technological novelty would the network potentially create?

23. Which other network project organizations would the organization see as part of their own future network?

24. Would the potential network operate in Russia or Brazil or both?
    - To which extent would organizations create their own organization in the target country? (virtual/production/sales and marketing/R&D…)
    - To what extent would the organization use the target country markets as part of the network?
    - As a focal company, what type of network would the organization create? (hierarchical/partnership)
    - What would be the main selection criteria for potential partners? (price competition, quality, partnership, financing..)
    - How willing is the organization to include local organizations as partners?:
        - Technical
        - Commercial
    - What type of companies should be developed in the target countries for the organization to do network collaboration?
    - Would a dispersed organization cause a new type of challenge?

25. Does the organization think that the network would divide into sub-networks or several networking projects?
    a. Would division be a positive or a negative thing?
    b. If the network were divided into sub-networks or into several networking projects, which kinds of networks would the network divide into?

26. What timeline vision does the organization have for the new project to start after the current networking project ends?

27. In your opinion, would new public financing or such a grant be decisively important in order for a new project to take place after the networking project?

28. What would be the means to receive political support for the networking of this network project type?

Appendix 2 Codes used in the empirical analysis

Codes of Strategy 1 phase: Background information of NW

#	Code groups	Codes
1	General	Description of company's business
2	General	Current Customers and customer groups
3	General	Current Target markets
4	General	Current Sales arguments
5	NW product of Finnish offshore industry	Current Supply of company for NW and customer
6	NW product of Finnish offshore industry	Ideal future supply
7	NW product of Finnish offshore industry	Customer of ideal future supply
8	NW product of Finnish offshore industry	Sales arguments of ideal future supply
9	Networking amongst NWP	Key partners in NW product
10	Networking amongst NWP	Capabilities of taking and sharing supply scale and responsibility
11	Networking amongst NWP	Potentiality to collaborative development
12	Networking amongst NWP	Competitive situation
13	Networking within target market industry	Current presence
14	Networking within target market industry	Readiness for local production
15	Networking within target market industry	Forms of potential local production (JV, Licencing, subcontracting etc.)
16	Networking within target market industry	Potentiality of joint presence with NWP partners
17	Subcontracting from Finnish SMEs	Subcontractors in most cases
18	Subcontracting from Finnish SMEs	Requests for subcontractors

Codes of Strategy 2 phase: Capability-building strategy of NW

#	Code groups	Codes
19	Capability building strategy vision	Expectations of NW training strategy
20	Background and needs	The new knowledge needs of various groups within the organization
21	Background and needs	General outlook on offshore training needs within the organization
22	Background and needs	Grounds for training need emergence
23	Background and needs	Training supply's impact on training demand
24	Background and needs	Three technical training themes (FPSO, Drilling, Logistics of megaprojects) and other potential
25	Background and needs	Outlook on Sales and marketing in offshore theme seminar
26	Background and needs	Potential lecturers within the company for Sales and Marketing in offshore theme seminar
27	Background and needs	Potential topics for seminars
28	Training partners	Opinion on current training partners: SAMK, TuAMK, TTY Pori
29	Training partners	Opinion on current collaboration with Aalto University
30	Training partners	Experiences with other education providers
31	Training partners	Opinion on foreign university training potential
32	Training partners	Opinion on foreign lecturers training potential
33	Training partners	Relevance of offshore professorship in Finland
34	Training partners	Experiences of Introduction on offshore-course
35	Type of capability building	Degree education
36	Type of capability building	Continuing training
37	Type of capability building	Online training
38	Type of capability building	Inter-company exchange program
39	Type of capability building	Type of research carried out in companies
40	Type of capability building	Other types of research ventures
41	NWP interactions and comments	Opinion on Network's own internet-pages
42	NWP interactions and comments	NWP comments
43	NWP interactions and comments	Attitude towards coming workshops
44	NWP interactions and comments	Attitudes towards attendance of others than managers in NWP

Codes of Strategy 3 phase: Networking Strategy

#	Code groups	Codes
45	**NW project**	Satisfaction with NW-project - Comment on score
46	NW project	Satisfaction with NW-project
47	NW project	NW project goal achievement
48	NW project	NW project goal achievement - gains exceeding the original plans
49	NW project	NW project goal achievement - lack of gains
50	NW project	NW project goal achievement of the company
51	NW project	NW project goal achievement of the company - achievements exceeding the original plans
52	NW project	NW project goal achievement of the company - lack of goals
53	NW strategy	Offshore-business as part of company's written strategy
54	NW strategy	Networking as part of company's written strategy - company's goals
55	NW strategy	Networking not as part of company's strategy - reasons
56	NW strategy	NW strategy - existence of special
57	NW strategy	NW strategy of the firm - Content
58	NW strategy	Written NW strategy's execution and follow-up with measurements
59	NW strategy	Which part of organizations competitive strategy does partnership or networking support or resonate in particular
60	NW strategy	Networking strategy - roles of the company as FC
61	NW strategy	Networking strategy - roles of the company not as FC
62	NW strategy	Networking strategy - roles of the company as FC - Both FC and not
63	NW strategy	NW after NWP - company's goals
64	NW strategy	NWP participation as part of NW strategy
65	NW structure	Network types (customer, competitor, supplier, subcontractor) company operates in
66	NW structure	Network structures, hiearchical or partnership, the company currently operates in
67	NW structure	Network's FC - company's operation as FC or not
68	NW structure	NW roles the company would master
69	NW future vision	NW collaboration - aims at extending
70	NW future vision	Types of companies for future NW collaboration
71	NW future vision	NW extending to other types of organizations - e.g. universities and research institutes
72	NW future vision	Time frame for future NW launch after NWP
73	NW future vision	Product or entity future NW would supply for target market
74	NW future vision	Novelty the company would provide for the future NW
75	NW future vision	Add. capabilities other partners could provide for future NW
76	NW future vision	Technological novelty the future NW could potentially create
77	NW future vision	Roles the company would master in future NW
78	NW future vision	Other NWP companies the company sees as part of the future NW
79	NW future vision	Outlook on NW devision to sub-NWs
80	NW future vision	NW structure vision, three choises
81	NW future vision	NW strategy - would a project by the future NW require new vision on the company's current NW strategy
82	NW future vision	Role of public funding in future NW
83	NW future vision	Means to receive political support for future NW
84	NW future vision	Target market of Future NW (Brazil or Russia or both)

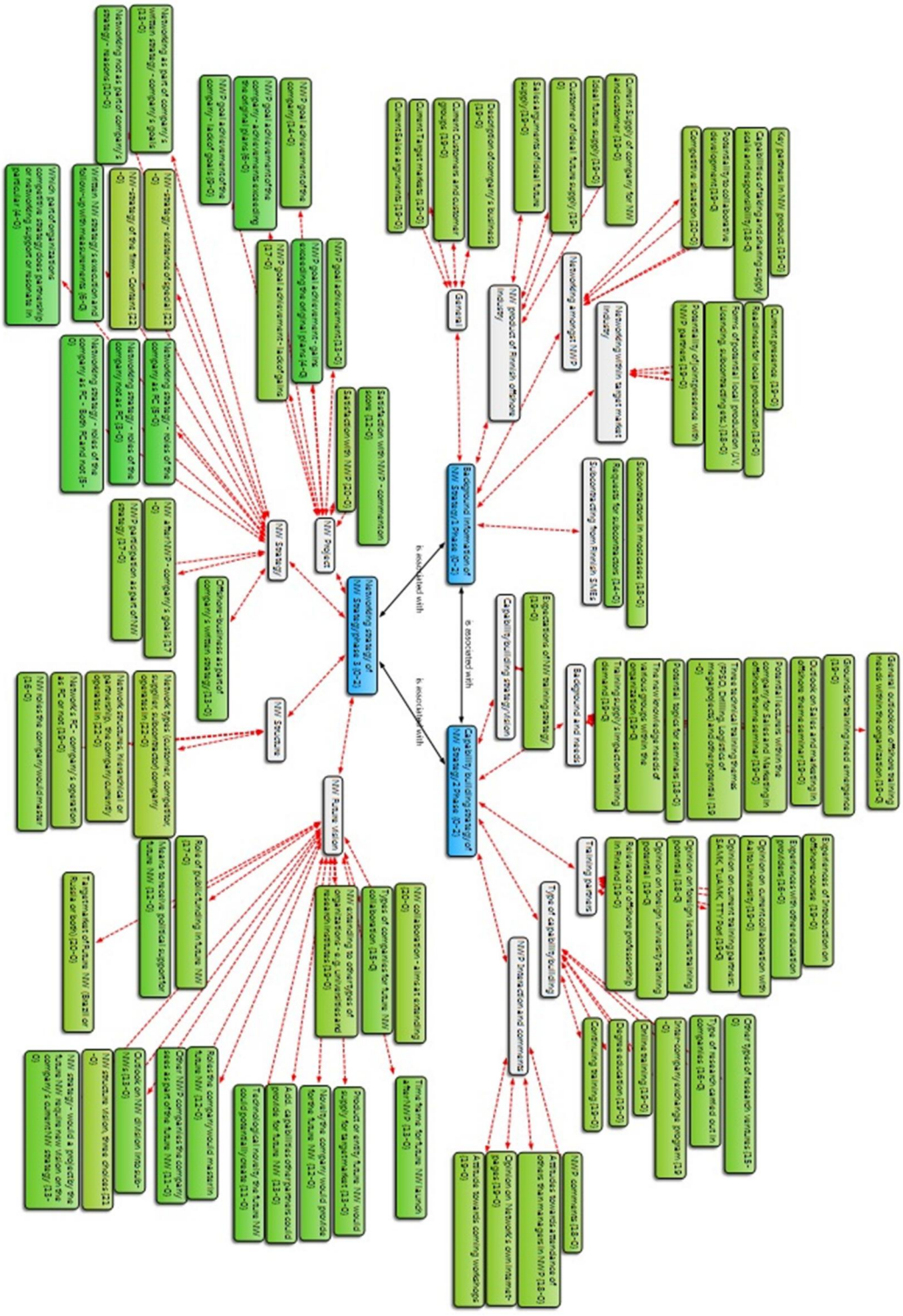
Codes of Documents 1/2

#	Codes
85	Board meegings - Action plan execution - customer interface general
86	Board meetings - Action plan - Feedback from the NW orgs
87	Board meetings - Action plan - links to other projects
88	Board meetings - Action plan - next projects
89	Board meetings - Action plan - next steps
90	Board meetings - Action plan execution
91	Board meetings - Action plan execution - customer interface Brazil
92	Board meetings - Action plan execution -customer interface Russia
93	Board meetings - Aims of the project
94	Board meetings - Confidentiality
95	Board meetings - Connections to other stakeholders SME
96	Board meetings - NW organizations - new participants
97	Board meetings - Participants
98	Board meetings - Tasks of executive board
99	Board meetings - WS results - Research strategy
100	Customer interface - Brazil - Company visit - Views on operating in Brazil
101	Customer interface - Brazil - Delegation of Visit in Finland 08-2011
102	Customer interface - Brazil - Meetings in Brazil- Fin participants
103	Customer interface - Brazil - Meetings in Brazil- Plans and views on Fin NW
104	Customer interface - Brazil - Meetings in Brazil- Schedule and targets
105	Customer interface - Brazil - Meetings in Brazil w. government officials - Plans and views on Fin NW
106	NAO - goal and purpose
107	NAO - partners
108	Project application
109	Project as part of regional development
110	Project plan - Action plan - Capability building strategy
111	Project plan - Action plan - Customer interface Brazil
112	Project plan - Action plan - Customer interface Russia
113	Project plan - Action plan - Links to other projects
114	Project plan - Action plan - Network's internal services
115	Project plan - Action plan - Strategy work - Study of Product and service supply
116	Project plan - Action plan - Study of Networking strategies of NW organizations
117	Project plan - Aim of the project
118	Project plan - Capability building strategy
119	Project plan - Customer interface
120	Project plan - Restrictions of public financing
121	Public funding- terms - publicity of knowledge
122	Public funding- terms - scope of funding
123	Str reports - Aim of the project
124	Str reports - Conclusions
125	Str reports - Execution of the action plan
126	Str reports - Execution of the action plan - Customer interface - Brazil

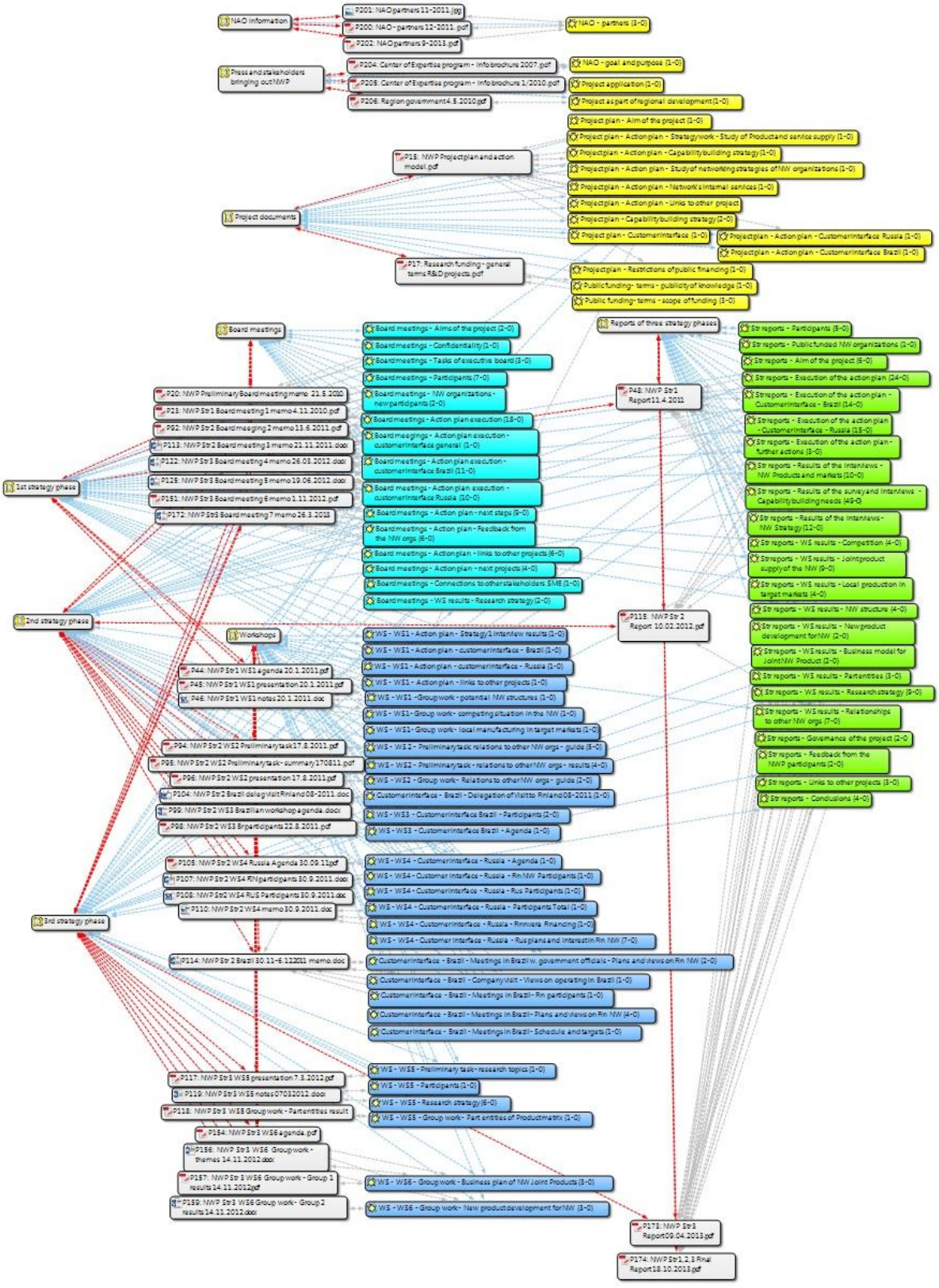
Codes of Documents 2/2

#	Codes
127	Str reports - Execution of the action plan - Customer interface - Russia
128	Str reports - Execution of the action plan - further actions
129	Str reports - Feedback from the NWP participants
130	Str reports - Governance of the project
131	Str reports - Links to other projects
132	Str reports - Participants
133	Str reports - Public funded NW organizations
134	Str reports - Results of the interviews - NW Products and markets
135	Str reports - Results of the interviews - NW Strategy
136	Str reports - Results of the survey and interviews - Capability building needs
137	Str reports - WS results - Business model for Joint NW Product
138	Str reports - WS results - Competition
139	Str reports - WS results - Joint product supply of the NW
140	Str reports - WS results - Local production in target markets
141	Str reports - WS results - New product development for NW
142	Str reports - WS results - NW structure
143	Str reports - WS results - Part entities
144	Str reports - WS results - Relationships to other NW orgs
145	Str reports - WS results - Research strategy
146	WS - WS 2 - Preliminary task: relations to other NW orgs - guide
147	WS - WS1 - Action plan - customer interface - Brazil
148	WS - WS1 - Action plan - customer interface - Russia
149	WS - WS1 - Action plan - links to other projects
150	WS - WS1 - Action plan - Strategy 1 interview results
151	WS - WS1- Group work - competing situation in the NW
152	WS - WS1- Group work - local manufacturing in target markets
153	WS - WS1 -Group work - potential NW structures
154	WS - WS2 - Group work - Relations to other NW orgs - guide
155	WS - WS2 - Preliminary task - relations to other NW orgs - results
156	WS - WS3 - Customer interface Brazil - Agenda
157	WS - WS3 - Customer interface Brazil - Participants
158	WS - WS4 - Customer interface - Russia - Agenda
159	WS - WS4 - Customer interface - Russia - Fin NW Participants
160	WS - WS4 - Customer interface - Russia - Finnvera Financing
161	WS - WS4 - Customer interface - Russia - Participants Total
162	WS - WS4 - Customer interface - Russia - Rus Participants
163	WS - WS4 - Customer interface - Russia - Rus plans and interest to Fin NW
164	WS - WS5 - Group work - Part entities of Product matrix
165	WS - WS5 - Participants
166	WS - WS5 - Preliminary task - research topics
167	WS - WS5 - Research strategy
168	WS - WS6 - Group work - Business plan of NW Joint Products
169	WS - WS6 - Group work - New product development for NW

Appendix 3 The network view of ATLAS.ti of all codes and code families used in analysis of the three interview rounds



Appendix 4 The network view of ATLAS.ti of all codes and code families used in analysis the analysis of the documents



Appendix 5 Network organizations and their participants in network events

1/2

Event	Preliminary meeting	1st Board meeting	Strategy 1 interview	1st Workshop	Str. 2 survey	2nd Board meeting	Str. 2 telephone/f2f-interview *)	2nd Workshop	3rd Workshop Brazil	4th Workshop Russia	3rd Board meeting
Company participation percentage	60 %	70 %	95 %	68 %	95 %	45 %	90 %	57 %	55 %	50 %	45 %
Company	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
A			CEO, Sales Manager	CEO				Design Manager		CEO	Sales Manager
B			Marketing Manager		B		Marketing Manager			Marketing Manager	
C		Director (Service Contracts)	Director (Service Contracts)	Director (Service Contracts)	C		Director (Service Contracts)				
D	Project Manager	Sales Manager	Managing Director, Offshore Manager	Offshore Manager	D	Managing Director	Offshore Manager	Offshore Sales Manager	General Manager - Brazil, Managing Director	Offshore Sales Manager	Project Manager
E	Senior Vice President 1, Vice President	Vice President	Senior Vice President 1, Vice President		E	Senior Vice President 1	Vice President		Vice President		
F	President	Sales Manager	President, Sales Manager, Vice President	President, Vice President Engineering	F	Sales Manager	Managing Director, Vice President Engineering				
G	Sales Manager		Managing Director, Sales Manager	Sales Manager	G		Managing Director				
H	Director (Sales and Marketing)	Director (Sales and Marketing)			H	Director (Sales and Marketing)	Director (Sales and Marketing)	Director (Sales and Marketing)	CEO, Director (Sales and Marketing)	Director (Sales and Marketing)	Director (Sales and Marketing)
I								Research Expert, Development Manager, Project Manager		Research Expert , Product Manager	Project Manager
J			CEO	CEO	J		CEO		CEO		
K											
L			CEO	CEO	L	CEO	CEO			Engineer	
M	Business Manager	Business Manager	Business Manager		M		Business Manager		Business Manager	Business Manager	
N	Product Manager	Product Manager	Vice President of Sales, Executive Vice President, Senior Sales Manager, Product Manager	Product Manager	N		Product Manager	Senior Sales Manager	Senior Sales Manager	Vice President of Sales	Product Manager
P		Area Sales Manager	President, Sales Manager, Area Sales Manager, Controller		P				Sales Manager	Director (Projects)	
Q		Sales Manager	Sales Manager, Vice President, Research Manager, Director	Sales Manager	Q	Vice President	Sales Manager	Expert	Sales Manager		Vice President
R	Executive Vice President		Executive Vice President, Senior Sales Manager, Sales Manager		R		Sales Manager	Senior Sales Manager			
S		Managing Director	Managing Director, Marketing Manager, Sales and Marketing Manager	Sales and Marketing Manager	S	Managing Director	Mananging Director	Sales and Marketing Manager	Managing Diretor, Sales and Marketing Manager		
T	Executive Vice President	Vice President (Project and Network), Manager (Quality Assurance)	Executive Vice President, Project Manager, Manager (Quality Assurance)	Project Manager	T		Project Manager *	Project Manager	Project Manager		Project Manager
U	Area Manager	Area Manager	Area Manager	Area Manager	U		Area Manager *				
V			Managing Director, Director (Offshore Technology), Area Manager	Managing Director	V	Managing Director, Sales Manager, Management Assistant	Managing Director, Management Assistant, Controller*	Sales Manager		Sales Manager	Managing Director, Chairman of the Board
W			Vice President	Vice President	W	Vice President	Vice President *		Vice President		Vice President
X	CEO 1		CEO 1, CEO 2, Business Manager		X		CEO 1				
Y											
Z											
NAO	CEO 1, Employee 1	CEO 1		CEO 1		CEO 1		CEO 1	CEO 1	CEO 1,	CEO 1
Project leader, responsible for the NWP	Project leader	Project leader	Project leader	Project leader		Project leader		Project leader	Project leader	Project leader	Project leader
NAO Project Manager/ Researcher			NAO Project Manager/ Researcher	NAO Project Manager/ Researcher		NAO Project Manager/ Researcher	NAO Project Manager/ Researcher	NAO Project Manager/ Researcher	NAO Project Manager/ Researcher	NAO Project Manager/ Researcher	NAO Project Manager/ Researcher
Development company	Development Manager 1, Development Manager 2	Development Manager 1		Development Manager 1		Development Manager 1	* personal interview	Project Manager	Project Manager 1		Project Manager 2
Public Financer											
Other participants	CEO of Company Å, CEO of Company Ä, Machine Technology Center Program Director	University Professor of Maritime, Machine Technology Center Programme Director						State owned specialized Financing company, Financing Manager	State owned specialized Financing company, Financing Manager		

Network organizations and their participants in network events

2/2

Event	5th Workshop	4th Board meeting	5th Board meeting	Str. 3 interview	6th Board meeting	6th Workshop	Final seminar	7th Board meeting	Number of events company partici-pated in	Events that company could have partici-pated	Partici-pation per-centage
Company participation percentage	41 %	32 %	52 %	92 %	40 %	40 %	56 %	44 %			
Company	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant			
A			Project Manager	CEO, Sales Manager		Sales Manager	Sales Manager	Sales Manager	10	19	53 %
B	Marketing Manager		Marketing Manager	Marketing Manager, Senior	Marketing Manager	Marketing Manager			9	17	53 %
C				Senior Vice President of Finance, Director					6	19	32 %
D	Project Manager	Managing Director	Project Manager	Managing Director, Offshore Sales Manager	Managing Director, Offshore Sales Manager		Managing Director	Managing Director	18	19	95 %
E	Vice President			Senior Vice President 1, Senior Vice President 2		Senior Vice President 2	Senior Vice President 1	Senior Vice President 1	12	19	63 %
F	Sales Manager			Managing Director, Project Manager, Engineering					9	19	47 %
G									7	7	100 %
H	Director (Sales and Marketing)			Director (Sales and Marketing)	Director (Sales and Marketing)		Director (Sales and Marketing)	Director (Sales and Marketing)	13	19	68 %
I			Project Manager	Project Manager	Project Manager	Account Manager	Project Manager		7	12	58 %
J				CEO			Managing Director		7	19	37 %
K				Director					1	5	20 %
L			CEO						7	19	37 %
M		Business Manager	Business Manager	Business Manager			Business Manager	Business Manager	13	19	68 %
N				Product Manager, Senior Sales Manager			Product Owner	Product Owner	13	19	68 %
P									5	19	26 %
Q		Sales Manager	Sales Manager	Sales Manager		Sales Manager	Sales Manager	Sales Manager	15	19	79 %
R				Executive Vice President					6	19	32 %
S		Managing Director		Managing Director, Sales and Marketing Manager		Sales and Marketing Manager	Managing Director	Managing Director	13	19	68 %
T	Manager (Quality Assurance), Project Manager	Project Manager	Project Manager	Executive Vice President	Project Manager	Project Manager, Production Manager			15	19	79 %
U				Area Manager					7	19	37 %
V	Offshore Expert		Managing Director	Managing Director, Offshore Expert	Offshore Expert			Offshore Expert	13	19	68 %
W		Vice President, General Manager	Vice President	Vice President	Vice President				12	19	63 %
X				CEO 2			CEO 2		6	19	32 %
Y			CEO	CEO	CEO		CEO	CEO	5	6	83 %
Z				CEO	CEO, Sales Manager	Sales Manager, Technical Director	Sales Manager		4	5	80 %
NAO	CEO 1	CEO 1	CEO 1		Chief Expert	Employee 2	Chief Expert	Chief Expert	15	15	100 %
Project leader, responsible for the NWP	Project leader	Project leader	Project leader	Project leader	Project responsible leader/NAO CEO2	Project responsible leader/NAO CEO2	Project responsible leader/NAO CEO2	Project responsible leader/NAO CEO2			
NAO Project Manager/ Researcher	NAO Project Manager/ Researcher	NAO Project Manager/ Researcher	NAO Project Manager/ Researcher	NAO Project Manager/ Researcher	NAO Project Manager/ Researcher	NAO Project Manager/ Researcher	NAO Project Manager/ Researcher	NAO Project Manager/ Researcher			
Development company	Development Manager 1, Expert	Development Manager 1			Project Manager 3		Chief Expert	Chief Expert			
Public Financer							Chief Expert	Chief Expert			
Other participants		Machine Technology Center Programme Director					Chairman of a Marine Working Group, CEO of Company Ä				

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