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School of Business and Management
Master's Programme in International Marketing Management (MIMM)

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STRATEGIC ENGAGEMENT IN INTERORGANIZATIONAL NETWORK: CASE GREENREALITY NETWORK

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ABSTRACT

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Title	Strategic engagement in interorganizational network: Case Greenreality Network
Faculty	School of business and management
Master's Programme	International Marketing Management (MIMM)
Year	2021
Master's thesis	LUT University 99 pages, 11 tables, 6 figures, and 5 appendices
Examiners	Professor Olli Kuivalainen Associate Professor Joona Keränen
Keywords	Interorganizational engagement, network management, interorganizational collaboration, interorganizational learning, interorganizational trust

Organizations form relationships and join interorganizational networks to create shared competitive advantage. Previous academic literature has focused on describing different types of networks, motivations to join interorganizational networks, and how organizations benefit from them. However, literature has not comprehensively explained how organizations engage or how engagement can be developed in interorganizational networks. This study aims to give a holistic description of interorganizational engagement and examine how it can be developed in network context.

The empirical part of this study was conducted as qualitative research. This study is a single case study, that concentrates on case network: Greenreality Network. The data for this research was gathered with nine semi-structured interviews. The data was analyzed using thematic analysis with NVivo data analysis software.

The findings of this study indicate interorganizational engagement includes elements of collaboration, communication, learning and trust. The results suggest all these elements affect each other. Furthermore, the results indicate the more organizations engage and put effort in the network, the more benefits they receive from the network.

This study gives managerial implications for developing all the elements of interorganizational engagement both for the network management and network member organizations management.

TIIVISTELMÄ

Tekijä	Emma Valtonen
Tutkielman nimi	Strateginen sitoutuminen organisaatioiden välisessä verkostossa: Case Greenreality Network
Tiedekunta	School of business and management
Pääaine	International Marketing Management (MIMM)
Vuosi	2021
Pro gradu -tutkielma	LUT-yliopisto 99 sivua, 11 taulukkoa, 6 kaaviota ja 5 liitettä
Tarkastajat	Professori Olli Kuivalainen Apulaisprofessori Joona Keränen
Avainsanat	Organisaatioiden välinen sitoutuminen, verkoston johtaminen, Organisaatioiden välinen yhteistyö, Organisaatioiden välinen oppiminen, Organisaatioiden välinen luottamus

Organisaatiot muodostavat suhteita ja liittyvät organisaatioiden välisiin verkostoihin luodakseen jaettua kilpailuetua. Aiempi akateeminen kirjallisuus on keskittynyt kuvailemaan eri verkostotyyppejä, ymmärtämään organisaatioiden motivaatioita liittyä organisaatioiden välisiin verkostoihin ja tapoja joilla organisaatiot hyötyvät verkostoista. Aiempi kirjallisuus ei kuitenkaan ole antanut kokonaisvaltaista selitystä sille, miten organisaatiot sitoutuvat organisaatioiden välisiin verkostoihin ja kuinka organisaatioiden välistä sitoutumista voisi kehittää. Tämän tutkimuksen tavoitteena on luoda kokonaisvaltainen kuva organisaatioiden välisestä sitoutumisesta ja tutkia kuinka sitä voidaan kehittää verkostokontekstissa.

Tutkimuksen empiirinen osa toteutettiin laadullisena tutkimuksena. Tämä tutkimus on tapaustutkimus, joka keskittyy case-verkostoon, Greenreality Networkiin. Tutkimuksen data kerättiin yhdeksällä puolistrukturoidulla haastattelulla. Haastatteludata analysoitiin temaattisella analyysillä hyödyntäen NVivo tilasto- ja analyysiohjelmaa.

Tutkimuksen tulokset osoittavat, että organisaatioiden välinen sitoutuminen sisältää elementtejä yhteistyöstä, kommunikaatiosta, oppimisesta sekä luottamuksesta. Tulokset osoittavat edellä mainittujen elementtien vaikuttavan toisiinsa. Lisäksi tutkimustulokset osoittavat, mitä enemmän yritys sitoutuu verkostoon ja panostaa siihen, sitä enemmän yritys hyötyy verkostoon kuulumisesta.

Tämän tutkimuksen perusteella voidaan antaa kehotuksia organisaatioiden välisen sitoutumisen elementtien kehittämiseen sekä verkoston johdon että jäsen organisaatioiden johdon näkökulmasta.

ACKNOWLEDGEMENTS

Firstly, I want to thank my supervisor Olli Kuivalainen for giving me assistance with this thesis, which I greatly appreciate. I also want to thank my co-workers at LUT University's Fast Expert Teams -project for supporting me through the process and helping me find this interesting subject for my master's thesis.

I am also incredibly grateful for my fellow MIMM-students for making studying fun. Throughout the master studies, I have met amazing people with passion for learning and success. You have all inspired me. I want to give special thanks for Helena, my partner in crime, who has encouraged me through my entire studies.

Finally, I want to show my gratitude for Paavo. It is not easy living together both writing master theses in the middle of covid-19. During this time, we could in turns tell each other to stop whining and start writing.

In Helsinki, 25 May 2021,

Emma Valtonen

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LIST OF SYMBOLS AND ABBREVIATIONS

CEO	Chief Executive Officer
GRN	Greenreality Network
ION	Interorganizational Network
R&D	Research and Development
SME	Small Medium Enterprise

INTRODUCTION

This chapter begins by introducing the background of this study, which is followed by discussing the objectives and determining the research questions of this study. Previous literature is shortly presented in a literature review. Next, the theoretical framework, definitions and delimitations of this study are explained. Finally, the research methodology is discussed, and the structure of this study is described.

1.1 Background of the research

It was realized already in the late 1900's that companies need to join their forces to create shared competitive advantage (Håkansson & Snehota 1989). Nevertheless, business conditions have changed significantly after the first notions of business networks. Today industries are based on continuous change and the relationships between firms are shaped by technologies (Halinen & Törnroos 2005) and trends. Not to mention the rapid changes caused by covid-19 pandemic. Interorganizational networks that combine public and private sectors are created to both support the local businesses but also to bring benefits for the local community (Besser, Miller & Perkins 2006). Organizations join networks with different understandings, beliefs and motivations (Berardo, Heikkila & Gerlak 2014), which makes the management of interorganizational networks challenging.

Interorganizational networks have been examined extensively and the literature related is diverse (Håkansson & Snehota 1989; Mattsson 1997). Networks have been studied from the perspective of social sciences (Granovetter 1973) and economics (Håkansson & Johanson 2001). Most of earlier network literature concentrates on network structures (Möller, Rajala & Svahn 2005), network management (Möller & Halinen 1999) and relationships between network members (Granovetter 1973). More recent academic literature has focused on how interorganizational network members engage with one another. Most of the literature regarding interorganizational engagement focuses on one element of engagement such as collaboration (Gray 1985), communication (Kasouf, Celuch & Bantham 2006), and learning (Håkansson & Johanson 2001).

Even though most of the elements of engagement have been studied for decades, a broader concept of interorganizational engagement is still very rare. This thesis will address this research gap by forming a broader concept of engagement including all vital elements of it: collaboration, communication, learning and trust. The emphasis of this study is on developing interorganizational network engagement, which means more active and high-quality engagement between the network members. Furthermore, this study aims to reveal best practices for the management of Greenreality network and its member organizations, even though previous literature shows varying results of the manageability of interorganizational networks (Jarillo 1988; Håkansson & Snehota 1989; Möller, Rajala & Svahn 2005).

1.2 Research objective and research questions

This study examines engagement between different organizations. More specifically, this study investigates how interorganizational engagement can be developed and managed in the context of an interorganizational business network. This study includes a case network called Greenreality Network (GRN). The case network operates in the Southeast Finland and the member organizations of GRN consist of educational institutions, cities, municipalities, and companies. Most of the member organizations work in the fields of energy and environmental technology. The current challenge of the network is to get its members engage more actively. The ultimate strategic goals of GRN are to become the center for energy and environmental technology, promote local companies, support synergy between the network members, develop business environment, provide infrastructure for testing and deploying environmental solutions, present high-tech innovations, and attract investments for the region. For GRN to achieve its strategic goals, the members of the network need to engage more and be actively involved in the network activities. (Greenreality 2016; Kryzhanivska 2020)

There are two main objectives for this master thesis. First, to explore what elements interorganizational engagement includes in the context of interorganizational networks (ION's). Second, it will be determined how interorganizational engagement can be developed within the case network and what are the best practices for the management in GRN to support the development of interorganizational engagement.

The main research question of this study is:

- *How can engagement in interorganizational business networks be developed?*

Sub-questions established to support the main research question are:

1. *What are the key elements of engagement in interorganizational business networks?*
2. *What is the motivation behind engaging in a local interorganizational business network?*
3. *What are the barriers of engagement in interorganizational business networks?*

A throughout academic literature review and an empirical study were carried to answer the research question and the sub-questions. The main research question was answered by first answering the sub-questions and combining the answers to form a holistic view of interorganizational engagement development in ION's. The theoretical part of the study mostly addressed the first sub-question as a broad theoretical model of engagement in ION's was created based on a systematic literature review. The second and third sub questions were answered by analyzing the empirical interview data gathered by interviewing GRN member organizations. The second sub-question was answered by analyzing GRN members expectations and motivations to join the network and take part in network activities. The third sub-question was answered by analyzing the matters which negatively affect interorganizational engagement of GRN.

From a practical perspective, the objective of this study was to provide managerial insight for both the management of Greenreality network and the member organizations to develop engagement within the network. Moreover, this study may help other ION's to increase the amount of engagement and the quality of engagement by elaborating on the best practices and experiences of GRN members.

1.3 Previous research

This literature review is based on a throughout systematic review of academic literature in the topic of interorganizational business networks and interorganizational engagement. Before conducting the empirical part of the study, it was important to understand the broad and complicated concepts, as understanding the research topic helps researcher to prepare for the research design (Shank 2006, 117-118; Lee & Ling 2008, 132). Both topics are built on research from multiple different backgrounds like social science, organization studies, technology, purchasing, and marketing (Ritter & Gemünden 2003). This literature review is not restricted to one research methodology, one particular journal or one geographic area and it covers all relevant literature on the topic (Webster & Watson 2002). First it was important to understand what interorganizational networks are and how they operate. Second, it was important to understand how the members of interorganizational networks behave and what interorganizational engagement is.

ION theory is mature as it became popular at the end on the 1900s (Granovetter 1973; Håkansson & Snehota 1989). Theory about interorganizational engagement is quite scattered as ION's have been studied from different perspectives. Below in table 1 the seminal articles of interorganizational network theory and their findings are presented to support this literature review. Research on interorganizational networks has developed from the research of interorganizational relationships. Håkansson and Snehota (1989) first introduced the concept of interorganizational networks in their article *"No business is an island: The network concept of business strategy."* They suggested businesses must change their focus and allocate company's resources towards collaboration and interacting with other organizations. After their seminal article network theory became more popular and new streams of research emerged.

Table 1 Overview of interorganizational network literature

Author(s) and article	*Main findings and the subject*
Granovetter. (1973) The Strength of Weak Ties.	Interorganizational relationships: Organization ties between other organizations.
Jarillo. (1988) On Strategic Networks.	Concept of strategic networks. View that networks can't be managed.
Håkansson & Snehota. (1989) No business is an island: The network concept of business strategy.	The concept of interorganizational business networks.
Gulati & Gargiulo. (1999) Where do interorganizational networks come from?	The formation of interorganizational networks.
Ritter & Gemünden. (2003) Interorganizational relationships and networks: An overview.	Descriptions of different research streams about interorganizational relationships and networks: antecedents, dynamics, and effects.
Ritter, Wilkinson, & Johnston. (2004) Managing in complex business networks.	Synthesis of management issues in the complex network context. View that networks can be managed.
Möller, Rajala, & Svahn. (2005) Strategic business nets -their type and management.	Network structure, types, and management.
Ahuja, Soda, & Zaheer. (2012) The Genesis and Dynamics of Organizational Networks.	Synthesis of the network dynamics: reasons why networks emerge, evolve and change.

There are two broad streams of network literature which have been explored. One of those streams is the structure of interorganizational networks. Ahuja, Soda and Zaheer (2012) carried out a synthesis of the existing academic literature of network structures. Their study concludes that network's architecture can be conceptualized by determining the nodes that construct the network, the ties that connect the nodes, and the structure which results from these connections. Research indicates the strength and quality of the ties affects the network capabilities (Capaldo 2007). Most of the academic literature about network structures describes or conceptualizes different types of networks (Möller & Rajala 2007; Pallotti, Lomi & Mascia 2013) and the formation of networks. (Gulati & Gargiulo 1999; Ahuja, Soda & Zaheer 2012).

The second ION research stream is the management, government, and leadership of interorganizational networks. In the late 1900's it was seen that networks cannot be managed by lead organizations (Jarillo 1988). However, later academic literature argues networks can be managed (Ritter, Wilkinson & Johnston 2004; Dagnino,

Levanti & Mocciaro Li Destri 2016). Some scholars have adopted a more pragmatic point of view. For example, Möller, Rajala and Svahn (2005) suggest networks cannot be fully managed, network management is a relative issue, and the type of networks affects to which extend it can be managed.

Theory of interorganizational engagement

The theory of interorganizational engagement in network context is more fragmented and there are multiple streams of research regarding it. Most of the academic articles concentrate on one element of the engagement. Thus, it was especially important to systematically go through the relevant literature and build a complete fundament of the theory to support the empirical part of this study. Below in table 2 the most important articles of the different elements of interorganizational engagement are presented.

One dominant stream of interorganizational engagement research is interorganizational collaboration. Hardy, Phillips and Lawrence (2003) defined interorganizational collaboration as a *"cooperative interorganizational relationship that is negotiated in an ongoing communicative process that does not rely either on market or hierarchical mechanisms of control."* Large part of the earlier literature about interorganizational collaboration explains collaboration structures (Möller & Rajala 2007) or the reasons why stakeholders might initially get involved in the collaborative process (Berardo, Heikkila & Gerlak 2014). Earlier literature distinguishes multiple motivations for interorganizational collaboration. Which include areal sustainability (Sharma & Kearins 2011), competitive advantage from new innovations (Alexiev, Volberda & Van den Bosch, Frans A. J. 2016), governmental projects (Gray 1985; Klijn & Koppenjan 2000), environmental change (Hsin-Mei Lin 2006), and benefits for internationalization (Vasilchenko & Morrish 2011). As there are many motives for interorganizational collaboration, even the members of the collaboration might enter it with different understandings, beliefs, and motivations. Sharma and Kearings (2011) present both the benefits and problems of engaging in interorganizational collaboration. The problems are usually caused by lack of commitment, insufficient communication, and partners that pursue only their own interest.

Table 2 Overview of interorganizational engagement literature

Author(s) and article	*Main findings and the subject*
Zaheer, McEvily, & Perrone. (1998) Does Trust Matter? Exploring the Effects of Interorganizational and Interpersonal Trust on Performance.	The concept of interorganizational trust and its implications to economic exchanges.
Hardy & Phillips. (1998) Strategies of Engagement: Lessons from the Critical Examination of Collaboration and Conflict in an Interorganizational Domain.	Interorganizational collaboration strategies, conflicts and problem solving.
Håkansson & Johanson. (2001) Business network learning.	Theory of business network learning.
Kasper-Fuehrer & Ashkanasy. (2001) Communicating trustworthiness and building trust in interorganizational virtual organizations.	Success factors of communicating trustworthiness in interorganizational organizations in digital context.
Hardy, Phillips, & Lawrence. (2003) Resources, Knowledge and Influence: The Organizational Effects of Interorganizational Collaboration.	Definition of interorganizational learning.
Möller & Rajala. (2007) Rise of strategic nets — New modes of value creation.	Value creation in strategic networks. Identification of 3 network types based on the value creation process.
Sharma. & Kearins. (2011) Interorganizational Collaboration for Regional Sustainability: What Happens When Organizational Representatives Come Together?	The benefits of interorganizational collaboration: focus on sustainable regional collaboration.
Thorgren, S.& Wincent, J. (2011) Interorganizational Trust: Origins, Dysfunctions and Regulation of Rigidities: Interorganizational Trust.	The “blinding” effect of trust: Companies disadvantage from trusting one organization and not looking for other collaborations.

Value creation is tightly connected with collaboration and it has created a sub-stream of interorganizational collaboration research. Firms engage in collaborative relationships to work together to add value or reduce cost in the exchange between the organizations (Andersson, J. 1995). In value creation the interacting actors gain access to partner’s complementary resources, which enables organizations to offer their own customers more extensive value and deepen their tie to their customers (Jaakkola & Hakanen 2013). Anoop and Tallman (1998) explain extracting value from collaboration requires shift from opportunism to aligning interactions with the partner

firms. Le Pennec et al. (2018) argue different types of value are created sequentially in a critical path, which is a continuum of value creation. The path begins with associational value and develops through transferred and interactional value towards synergistic value creation.

Interorganizational innovation is another sub-stream of interorganizational collaboration literature. Research has focused on interorganizational innovation because firms increasingly innovate in collaborative settings (Dong, McCarthy & Schoenmakers 2017) and there is a positive relationship between innovative performance and interorganizational collaboration (Hardy, Phillips & Lawrence 2003; Faems, Looy & Debackere 2005). Academic literature indicates some network features support innovative processes more than others. Dhanaraj and Parkhe (2006) and Capaldo (2007) propose firms are more likely to be exposed information which supports development of breakthrough innovation when they work with other central organizations in a network. Dong, McCarthy & Schoenmakers (2017) suggest organizations can broaden their innovative collaboration by integrating public partners to their networks as public and private partners have different kind of knowledge to support innovation. Thorgren, Wincent & Örtqvist (2009) argue larger networks and networks which have been formed bottom-up achieve greater innovative performance. Furthermore, the research underlines companies should use portfolio approach and pursue multiple interorganizational projects at the same time (Hardy, Phillips & Lawrence 2003; Faems, Looy & Debackere 2005).

Second stream of interorganizational engagement literature covers interorganizational communication. Communication is the fundament for interorganizational actions, and it affects all aspects of interorganizational engagement. The research stream covers topics of conflicts (Assael 1969) and stakeholder view (Scholes & Clutterbuck 1998). Furthermore, newer academic literature has focused on communication in digital platforms. Hossain and Lassen (2017) argue many organizations still struggle to benefit from digital platforms in their communication and distinguish different types of platforms which are suitable for different purposes. Even though digital platforms enable versatile communications, it is argued technical issues can prevent high-quality dialogue and engagement (Berardo, Heikkila & Gerlak 2014).

Another stream of interorganizational engagement focuses on learning. Some researcher prefer the term learning (Håkansson, Havila & Pedersen 1999; Huxham & Hibbert 2004), whereas others prefer knowledge transfer (Lane & Lubatkin 1998; Easterby-Smith, Lyles & Tsang 2008). Interorganizational learning refers to learning in a context of groups or pairs of organizations that are collaborating actively (Knight 2002). Huxham and Hibbert (2004) also differentiate knowledge transfer from knowledge creation. Knowledge transfer is learning from each other and knowledge creation is learning together. Researchers have studied learning and knowledge transfer from multiple different perspectives: supporting elements (Håkansson, Havila & Pedersen 1999) technology's effect (Ahuja, Soda & Zaheer 2012), motivations (Huxham & Hibbert 2004), and attitudes (Huxham & Hibbert 2008). Easterby-Smith, Lyles and Tsang (2008) focused on dyadic knowledge transfer and proposed a theoretical framework about it.

The final stream of interorganizational engagement literature is trust. There is a lot of academic evidence that trust supports interorganizational engagement and enables organizations to form deeper relationships with each other (Achrol 1996). Great deal of the literature associates interorganizational trust with positive effects, such as lower costs of collaboration (Gulati & Nickerson 2008), higher economic performance of the organization (Zaheer, McEvily & Perrone 1998), increased results on knowledge transfer (Li, L. 2005), better interfirm innovation results (Arnaud & Mills 2012), and successful value creation (Holm, Eriksson & Johanson 1999; Hsin-Mei Lin 2006). However, there is also evidence trust can "blind" organizations and disadvantage the organization (Thorgren & Wincent 2011). In addition, literature also describes how trust is build and nurtured between organizations (Vangen & Huxham 2003; Thorgren & Wincent 2011).

Previous literature about interorganizational engagement has created vast amount frameworks that acknowledge different streams of literature. In this study all the mentioned streams are acknowledged and combined to one theoretical framework which is presented in the following chapter 1.4. Furthermore, a framework that combines all theories is presented in chapter 3.5.

1.4 Theoretical framework

Theoretical framework of this study is constructed based on a systematic literature review. The purpose of the theoretical framework is to guide this study. Thus, theoretical framework is used both for understanding the phenomenon to begin with, and for planning the implementation of the research to collect high-quality data and to analyze the data coherently. The theoretical framework of this study is constructed around two main concepts: interorganizational networks and interorganizational engagement. ION theory includes the management of the network and relationships within the network. Interorganizational engagement theory consists of collaboration, communication, learning, and trust. All engagement concepts are examined from interorganizational network perspective. The theoretical framework is illustrated in figure 1 below.

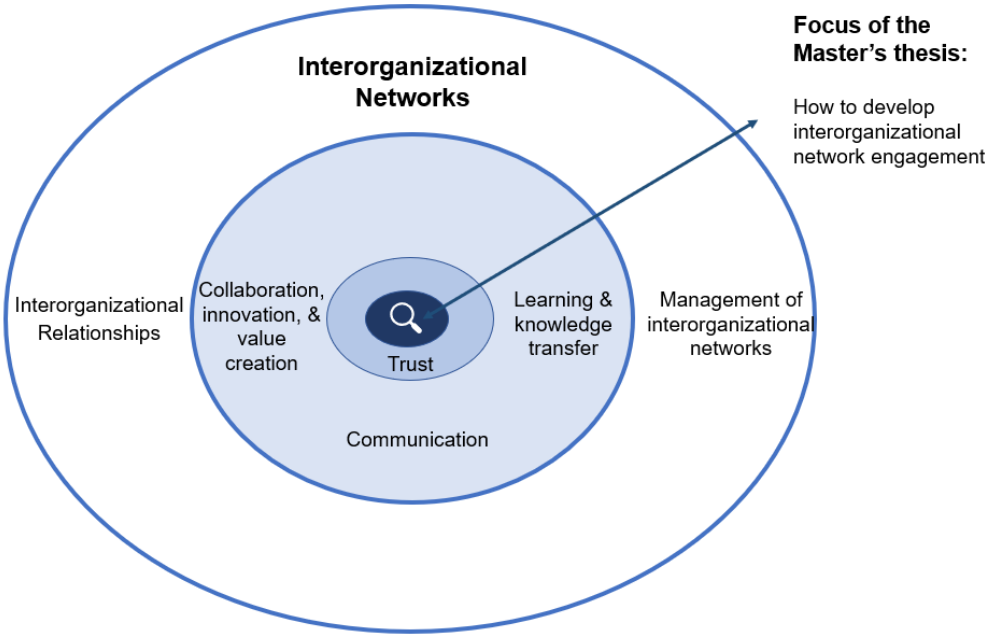

Figure 1 Theoretical framework

As figure 1 presents, collaboration includes innovation and value creation and learning includes knowledge transfer. Furthermore, trust is put on the middle of the theoretical framework as academic literature has shown it has positive effects on all other elements.

1.5 Definitions

In this section the key definitions are explained to help understand the selected viewpoints and scope of the study. There are multiple definitions used in the study and the rest will be explained in the theoretical part of the study.

Interorganizational: Actions between two or more different organizations (Cambridge Dictionary 2020).

Network: Networks consist of a set of actors or nodes along with a set of ties that link them (Borgatti & Halgin 2011).

Interorganizational network (ION): ION's have been defined in many ways. Sydow, Fish and Provan (2007) use more generic description and define interorganizational networks as groups of three or more organizations that are connected in ways which enable to achieve common goals. Ritter, Wilkinson and Johnston (2004) describe ION's based on their structure: "Complex webs of linkages interconnecting a variety of idiosyncratic organizations within and across industries". Interorganizational networks consist of large numbers of functionally specialized organizations that are tied together in cooperative exchange relationships (Achrol 1996).

Interorganizational engagement: Previous academic literature does not offer an unambiguous definition for interorganizational engagement. However, Interorganizational engagement is associated with collaboration, communication, learning, and trust (Berardo, Heikkila & Gerlak 2014). In this study interorganizational engagement is defined as collaborative actions that surpass organizational boundaries. Further collaboration, communication, learning, and trust are considered as elements of engagement that influence each other.

Network learning: "Learning by a group of organizations as a group" (Knight 2002).

Interorganizational collaboration: Collaboration between two or more organizations. Collaboration is *"a cooperative, interorganizational relationship that is negotiated in an*

ongoing communicative process, and which relies on neither market nor hierarchical mechanisms of control" (Hardy, Phillips & Lawrence 2003).

Interorganizational innovation: Innovation that occurs between two or more organizations. Innovation is both development of new technologies and competences and improvement and further development of existing technologies and products (Wheelwright & Clark 1992, 4).

Inter-organizational trust: Collective trust orientation toward a partner organization which includes elements of partner organization's reliability, predictability and fairness (Zaheer, McEvily & Perrone 1998).

1.6 Delimitations

Network theory has evolved towards theory of ecosystems. Ecosystem is "a dynamic structure which consists of an interconnected population of organizations" (Peltoniemi & Vuori 2008). However, previous research about the case network Greenreality Network showed the Greenreality Network is not an ecosystem yet, even though it has the potential to become one (Kryzhanivska 2020). Thus, academic literature considering ecosystems and engagement in that context has been limited out of the scope of this research. This study will support the development of Greenreality Network from network towards an ecosystem by improving the engagement of the network, which leads to a more dynamic structure.

Engagement can be studied from multiple different network perspectives, such as company as a network, social networks, and intraorganizational engagement. This study concentrates on interorganizational networks, thus all literature regarding intraorganizational and social networks has been limited from this research.

1.7 Research methodology

The methodology of this research follows the suggested features of Gioia's, Corley's and Hamilton's (2013) study. Initially, a thorough systematic literature review was conducted using different databases, such as LUT University's Primo, Scopus and

Google Scholar. Literature review was organized according to different literature themes to form a theoretical background for the study. RefWorks citation management tool was used to simplify the process of gathering and referencing to previous literature.

This study is a qualitative single case study. The case in this study consists of case network Greenreality Network. GRN is a South Karelian business-oriented network. The network consists of energy and environmental actors which are local businesses, municipalities, and educational institutes. GRN has 46 members and is coordinated by the city of Lappeenranta. Case study approach is suitable for studies that require in-depth explanations of social behavior in specific context (Zainal 2007) . Furthermore, case study approach is beneficial as there is an intimate linkage between empirical evidence (Eisenhardt 1989).

The data collection was conducted with semi-structured interviews. The interviewees were treated as knowledgeable agents and the interview protocol was flexible to enable informant responses (Gioia, Corley & Hamilton 2013). The interviews were planned according to Hirsjärvi and Hurme's (2001, 67) model of thematic interviews. First, themes were planned according to literature review and research questions and then questions were planned to give answers for the themes. A purposeful sampling approach was used to choose the interviewees, to make sure all types of network members are present in the study. Interviews were conducted until there was saturation in the answers and new interviews did introduce new relevant information for the study (Tuomi & Sarajärvi 2018, 99). All interviews were recorded, and the interview data was transcribed into word documents by professional transcribing service.

Data analysis of this study was made with a qualitative data analysis tool NVivo. The analysis part followed Goia's, Corley's and Hamilton's (2013) study. First, a comprehensive compendium of first-order terms was developed. Second, the terms were organized into second-order theory-centric themes. Third, the themes were distilled into overarching theoretical dimensions. Finally, the terms, themes, and dimensions were assembled into a data structure. The final part of the methodology, articulating grounded theory, followed the Goia's, Corley's and Hamilton's (2013) study

as well. First, relationships were formulated among the second-order concepts in data structure. Second, static data was structured into dynamic grounded theory model and finally the concept was refined based on the initial academic literature review.

1.8 Structure of the study

This study is divided into six main chapters which are presented below in figure 2.The first chapter gives a brief introduction to the study. Theoretical background of this study consists of two chapters. First, the context of this study, interorganizational business networks, is discussed in the second chapter. Second, theory of interorganizational engagement is covered in chapter three. The theoretical background aims to form extensive understanding of the theories by explaining related concepts and relationships between these concepts.

Figure 2 The structure of the study

The research methods and research process are described in the fourth chapter. Emphasis is put on explaining what decisions were made and why those decisions were made to enhance the readers ability to assess the reliability of the study. The fifth chapter discusses the empirical findings of the study. The sixth chapter of the study concludes the findings of both the empirical part and the literature review, gives managerial implications based on the study, and explains the limitations of the study.

2 INTERORGANIZATIONAL BUSINESS NETWORKS

Strategy research originally viewed firms as autonomous entities which gained competitive advantage from internal resources and external industry sources (Porter 1989). Nevertheless, in the late 1900's research started to concentrate on the fact that organizations are involved in networks of different kind (Granovetter 1973; Van de Ven, Andrew H & Walker 1984; Håkansson & Snehota 1989; Johannisson & Nilsson 1989; Ritter 1999) and companies are increasing the development of horizontal relationships to noncommercial organizations like universities and governmental agencies to learn new competences and get access to resources and new markets (Möller & Halinen 1999). Rules of competition started to change and companies started to form knowledge-based alliances (Lane & Lubatkin 1998). Today's research indicates all firms should be seen as connected business systems instead of isolated ones (Johannisson, Ramírez-Pasillas & Karlsson 2002; Ritter, Wilkinson & Johnston 2004). Every firm is dependent on other firms in their resources and cannot individually control their own actions and future (Möller & Halinen 1999).

Researchers have described studying interorganizational networks is problematic for multiple reasons. Ritter and Gemünden (2003) describe that studying interorganizational relationships and networks is challenging because former research has been carried out from multiple very different backgrounds, such as social science, organization studies, technology, innovation management, purchasing, and marketing. Scholars have chosen different perspectives, aims, and objectives for their studies. Barringer and Harrison (2000) point out that the use of different perspectives has led to a situation where many different terms are used interchangeably. This makes effective dissemination of research literature more difficult. In addition, researchers in different parts of the world have followed different trends and methods. Different research streams have not acknowledged each other's work making comparing data more difficult for researchers (Ritter & Gemünden 2003). Möller, Rajala and Svahn (2005) argue that majority of ION research focuses on characteristics and structure of networks which have evolved unintentionally. Thus, intentionally developed networks have been researched to a lower degree. Moreover, Li et al. (2020) argue traditional research of interorganizational networks concentrates

particularly on static structures even though most real cases are continuously changing temporal teams.

2.1 Conceptual background of interorganizational business networks

To elaborate the conceptual model of ION's, this study includes reviewing existing literature of interorganizational business networks and how researchers conceptualize them. Although ION is a widely understood term, it is not often exactly clear what researchers mean when they use the term. Many scholars use the terms partnership, business community, strategic alliance, interorganizational relationship, coalition, cooperative arrangement or collaborative agreement when they discuss about ION's (Provan, Fish & Sydow 2007). In this study the term interorganizational network is used.

The concept of business networks was originated by Håkansson and Snenota (1989) in their notable article descriptively named: *"No business is an island: The network concept of business strategy"*. They suggest businesses need to change their focus to network strategy and allocate company's resources towards collaborating and interacting with other organizations. Since that several new conceptualizations of different types of business networks have been made in the academic literature. One of these was made by Achrol (1996) who argue successful organizations are not large vertically integrated firms anymore. Instead the most successful organizations are leaner, more specialized firms that are part of large interorganizational networks of partnerships. These large interorganizational groups outgrow the potential of the sum of their dyadic relationships and are referred as network organizations.

Different definitions of networks have been created for different purposes. Networks can be broadly classified into two main categories: social and business networks. Social networks involve personal relationships and business networks involve economic exchange of some form (Vasilchenko & Morrish 2011). This study concentrates solely on business networks, more closely on interorganizational business networks. Ritter and Gemünden (2003) describe the characteristics of interorganizational networks. According to their research paper network can be described in terms of its actors, activities performed, and the resources of the network.

They determined interorganizational networks as *"complex webs of linkages interconnecting a variety of idiosyncratic organizations within and across industries."* Some researchers have taken a broader viewpoint and they see industries and markets as networks where the structure of an industry or market is the starting point for research (Mattsson 1997). More recently, Provan, Fish and Sydow (2007) used a more straightforward definition and viewed ION's simply as a *"group of three or more organizations connected in ways that facilitate achievement of a common goal".*

Interorganizational relationships

It is important to understand interorganizational relationships, as previous studies have revealed interorganizational relationships may develop into interorganizational networks (Gulati & Gargiulo 1999). Interorganizational relationship building has been studied from economic (Ritter, Wilkinson & Johnston 2004) and social (Granovetter 1973; Gulati & Gargiulo 1999) perspectives. Ahuja, Soda and Zaheer (2012) distinguish four types of relationships businesses and individuals can embed in: hierarchical, social, referential, and market relationships. Hierarchical relationships are authorial relationships, whereas social relationships reflect emotional bonds. Market relationships reflect competitive transactional ties and referential relationships represent certification relationships.

Boje and Whetten (1981) argue dyadic relationships have limitations as they fail to explain the whole relationship because relationship between any two organizations is strongly influenced by network context. Gulati and Gargiulo (1999) explain relationships between organizations develop into network structure as a result of long-term dynamic action and structure. According to their study organizations get involved in ION's because they want to minimize the uncertainty of choosing partners and gain access to resources. The network model that follows becomes a structure that affects the actions the organizations within the network take and acts as a structure where information is shared about potential partners. There are multiple motivations for organizations to engage in interorganizational relationships. Barringer and Harrison (2000) summarized the six theories that are widely used to explain interorganizational relationships. These paradigms from economic to behavioral are: Transaction Cost

Economics, Resource Dependency, Strategic Choice, Stakeholder Theory, Learning Theory and Institutional Theory.

Network relationships are not free as they require investments, management time and financial resources and relationships develop over time (Boje & Whetten 1981; Möller & Halinen 1999). Thus, organizations should carefully consider in which relationships they want to invest in.

Network structures

The structure of a network consist of a set of actors or nodes along with a set of ties that link them (Borgatti & Halgin 2011). Ahuja, Soda and Zaheer (2012) explain that networks' architecture can be conceptualized by determining the nodes that construct the network, the ties that connect the nodes, and the structure which results from these connections. The architecture of the network changes when the ties, nodes and structures change over time. Business network linkages can be competitive and cooperative at the same time, which makes it difficult to determine network structures (Gulati, Nohria & Zaheer 2000).

Large part of the network literature describes the structure of different ION types and how the type of the networks effects its activities (Pallotti, Lomi & Mascia 2013). For example, Möller Rajala and Svahn (2005) classify three types of strategic networks: (1) Vertical value networks, such as supplier and customer networks, (2) Horizontal networks, such as competition alliances and development alliances, and (3) Multidimensional value networks such as complex business networks. Their research suggests most existing networks can be described with these three types. Strategic networks are more formalized by structure and practice compared to wider less strategic networks (Knight 2002).

Business networks are complex, and it can be assumed network companies are involved in other business networks as well (Möller & Rajala 2007). Sometimes it is difficult to determine where the borders of a business network are as they include suppliers, logistics other partners, et cetera from multiple different organizations. It is important to notice changes and development of a certain business relationship can

cause consequences outside that specific relationship also (Holm, Eriksson & Johanson 1999). This changing and borderless character of business networks makes it difficult to manage the actions inside them. However, network vision helps to foresee the changes in the networks and evaluate the actor's own actions in the network (Möller & Halinen 1999). Capaldo (2007) studied how the structure of the network and its ties effect networks cooperative capabilities. The study indicates a core of strong ties and a periphery of heterogenous weak ties supports leading firms in gaining competitive advantage in knowledge-based alliance networks. Further, networks only consisting of strong ties might not support the competitive advantage of the firms involved.

Benefits and risks of interorganizational networks

Several authors have reported the versatile positive effects interorganizational networks offer. Achrol (1996) argues *"the true benefits of network organization are obtained only when one recognizes the unique managerial and economic benefits that emerge when the network is conceived of as a mini society of interdependent, reciprocal exchange relationships characterized by restraint of power, commitment, trust, solidarity, mutuality, flexibility, role integrity, and harmonization of conflict."* This indicates it is beneficial for organizations to understand the benefits IONs can offer and the interdependent nature of them.

Gulati, Nohria and Zaheer (2000) illustrated the importance of network effects by considering five traditional sources of competitive advantage in in the field of strategy research: *"1) Industry structure including the degree of competition and barriers to entry; 2) Positioning within an industry including strategic groups and barriers to mobility; 3) Inimitable firm resources and capabilities; 4) Contracting and coordinating costs; and 5) Dynamic and path dependent constraints and benefits."* Networks can provide organizations access to new information, markets, decreased risk, resources, and technologies. Networks can also allow organizations to achieve their strategic objectives (Gulati, Nohria & Zaheer 2000). This is supported by Hardy and Phillips (1998) who argue firms that have a heterogenous network of collaborative partners within their innovation strategies perform better by means of their innovative products. Furthermore, previous academic literature suggests interorganizational networks and

relationships can improve the innovative processes (Faems, Looy & Debackere 2005), learning and knowledge-sharing (Huxham & Hibbert 2004), and value-creation and collaboration (Le Pennec et al. 2018) of the member organization. The improvement of these elements supports the business and helps organizations to compete and create profit. These subjects will be discussed more detailed in chapter 3: Engagement in interorganizational networks.

Moreover, organization's placement within the network affects how beneficial the network is for the organization involved in it. Organizations which have a more central place in the strategic network can enjoy higher returns as they have better access to information and opportunities compared to organizations which are peripheral in the network (Gulati, Nohria & Zaheer 2000; Van Leeuwen et al. 2018).

Organizations can also have negative effect from ION's. It is difficult to foresee how partners in relationships and networks will behave in long-term. Organization might limit its contributions and free ride with other companies work or even opportunistically seek only benefit for selfish reasons (Gulati & Gargiulo 1999). ION's can lead to a situation where organization is locked in an unproductive relationship and prevent companies from partnering with other potential organizations (Gulati & Gargiulo 1999; Gulati, Nohria & Zaheer 2000). This situation occurs because it is difficult to assess the capabilities of possible relationships before the relationship is initiated and organizations are aware of the hazards of choosing a wrong partner (Gulati & Gargiulo 1999). Thus, organizations are more likely to stay with the safer, more familiar partners. Kim, Oh and Swaminathan (2006) describe this phenomenon as network inertia. The concept refers to a resistance of changing interorganizational networks ties and difficulties network members face when they try to form new network ties and break off from old ones. Organizations are unlikely to replace their partners with new ones because of network inertia. When organizations are not willing to transform and develop their relationships the evolution of the entire networks might suffer. Therefore, network inertia should be avoided if possible (Vangen & Huxham 2003). Furthermore, organizations are more likely to lock into a narrow safe and unproductive circle and not gain profit from new opportunities when their network only consists of strong ties instead of a combination of strong and weak ties (Capaldo 2007). It is difficult to determine how much interorganizational relationships and networks bring value for the

company. Traditional cost-benefit analysis is not enough for determining the benefits of the relationship and it is impossible to calculate a monetary return for the relationship (Barringer & Harrison 2000). Organizations must evaluate the complex situation from their own perspective and assess the possible positive outcomes against the downsides.

Local interorganizational networks

The mechanisms behind the formation of interorganizational network ties are often local (Pallotti, Lomi & Mascia 2013). Local networks are originated as they offer benefits for the member organizations and also for the local community. Local networks and interaction in them are associated with improved capacity for action through information and capacity flow in the area (Sharp 2001). Therefore policy-makers and local managers might use business network membership as a strategy for improving regional economic vitality (Besser, Miller & Perkins 2006).

In his research Vanhaverbeke (2001) argues SME's are locked into traditional competences and lack the resources to develop strategies across the entire value system, even though it could bring them benefits. SME's could seek for help from local institutions and business associations as they usually support companies' development. However, local associations and institutions often face the same problem of being locked into traditional competences. He argues that the design of interactive strategies over entire value system combined with interorganizational management skills are an important skill in local business networks. If companies want to upgrade their product development, design, distribution, and marketing they must network among firms which belong to the same business cluster. Study carried out by Besser, Miller and Perkins (2006) concludes the benefits local interorganizational networks can offer to the local community. First, ION's help small local businesses to be successful, which supports a strong local economy that supports the quality of life for the local community. Second, local business networks can encourage businesses to get involved in developing the area, as a relationship developed through business relationships can lead to personal invitation to get involved in the local community's betterment. However, there is always the possibility that business operators' network to pursue their own interests to the detriment of the local community.

Johansson, Ramírez-Pasillas and Karlsson (2002) carried out research about embeddedness in small business networks. They outlined a framework which proposes several layers of orders on embeddedness in a local area. First-order embeddedness is achieved between relationships and personal ties combining economic and social questions. Second-order embeddedness takes account also the memberships of the businesspeople and economic and social local institutions in the area. Third-order embeddedness concerns the cases where institutions are in the gaps between firms. Fourth-order embeddedness is seen as the rules of the exchange and information diffusions between firms and formal institutions, which reflect the local business culture. Their research supports the importance of ION's in developing local entrepreneurship.

2.2 Management of interorganizational networks

Early network theory provided tools for analyzing interorganizational networks and their managerial issues. However, it did not provide rules for managing the networks (Möller & Halinen 1999). Nevertheless, newer academic literature provides more knowledge and managerial suggestions about managing networks. When researchers discuss about management in network context terms governance (Klijn & Koppenjan 2000; Aggarval, Siggekow & Sing 2011), leadership (Huxham & Vangen 2000; Müller-Seitz 2012), and management (Ritter, Wilkinson & Johnston 2004; Möller, Rajala & Svahn 2005; Möller & Rajala 2007) are used. While a variety of terms have been used, this study will use the term management.

Network studies have shown varying results of the manageability of networks. Some scholars believe networks can be managed by lead organizations (Ritter & Gemünden 2003; Ritter, Wilkinson & Johnston 2004; Dagnino, Levanti & Mocciaro Li Destri 2016) whereas others perceive networks as constantly changing set of relationships which cannot be controlled intentionally by one actor (Jarillo 1988; Håkansson & Ford 2002). Networks without a central orchestrator are heterarchical and there is not a formal management in the network (Sydow & Müller-Seitz 2020). Möller, Rajala and Svahn (2005) have adopted a more pragmatic point of view and they suggest that even though networks cannot be fully managed, network management is a relative issue and the type of network affects to which expend it can be managed. Jarillo (1988)

identifies difference between networks that are managed and networks which do not need a leader. He describes networks that can be managed as strategic networks.

Network management does not originate itself as it demands deliberate actions from the organization within the network (Kattainen 2016). Network management between organizations is more than a formal structure, it is a unique and productive instrument for informal safeguards which interact with the social mechanisms of the organizations in the relationships of the network (Hsin-Mei Lin 2006). Intentional network management executed by lead organizations can be used to improve the effectiveness and speed of knowledge processes and the dynamics of the network (Ritter & Gemünden 2003; Dagnino, Levanti & Mocciaro Li Destri 2016).

According to Ritter, Wilkinson and Johnston (2004) there are two types of networks according to management; emergent unintentional networks and deliberate intentional networks. Their study argues that firms take part in different kind of network management situations. All these different situations require relationship and network management. Research by Möller and Rajala (2007) supports these findings as they argue different kind of networks require different kind of management. However, individuals in collaborative projects come from different organizations, which makes it difficult to identify responsibilities and a generally acknowledged leader (Huxham & Vangen 2000). Müller-Seitz (2012) points out that management of interorganizational networks occurs in manifold settings and it is essential to carry out research about all types of interorganizational leadership. For example, about public- private partnerships, non-profit organizations collaboration, and public interorganizational cooperation. Klijn and Koppenjan (2000) argue that steering of networks is needed because collaboration and co-operation does not happen on its own. They see network theory especially important in development of public management, and governmental actors as outstanding candidates for the role of network manager. Span et al. (2012) identified different government roles in the context of local public network governance. They describe three main roles of commissioner, coproducer, and facilitator. The effects of these roles depend on multiple contingency factors. The role of commissioner is expected to be the most effective in case there are multiple organizations, many new network members, low member diversity, and if services are stable. The coproducer role works well in cases where there is a balance between

new and old network members, moderate number of network organizations, moderate diversity between network members, and if services are moderately stable. Lastly, the facilitator role performs well in networks that have many old members, fewer organizations, high diversity, and unstable services.

According to their research none of the medias can be entirely controlled by the members of the collaboration. According to Ritter, Wilkinson and Johnston (2004) there are multiple levels of management in a network. The first level of management is individual actor's level. Second is the level of an individual dyad. Third level is the management of connected relationships where the actor is not directly involved. The fourth and final level of management is the level of the network. Dagnino, Levanti and Mocciaro Li Destri (2016) argue that every level of the network generates distinct structural dynamics and uses different roles and scopes of intentional networks management. Huxham and Vangen (2000) carried out research about leadership in interorganizational collaboration. Their research conceptualizes that leadership in collaborations stems from three medias: structures, processes, and participants. Further, all processes in collaborative efforts are not led by the members of the collaboration, as also external factors can affect the collaborative processes. For instance, funding often requires a positional leader and deadlines and these demands are only met to get access to funding.

Huxham and Vangen (2000) determined multiple issues in the leadership of interorganizational collaborative projects. Acknowledging a formal leader in collaborative projects is often difficult as there is not a hierarchical relationship between the individuals involved in the interorganizational collaboration. Furthermore, the process of agreeing to joined goals can be difficult as different organizations might have their own agendas involved. This problem is often solved by giving the leadership role to a committee, board, or a steering group. However, there is usually a leadership role in the committee itself. This position affects critically other members' possibilities to use their leadership role and drive their agenda in the committee.

Håkansson and Snenota (1989) examined how network view affects businesses strategy model. Their research revealed continuous interaction with other businesses requires to focus more towards the way the company interacts with other companies

and relates its own resources and activities for other businesses instead of how the organization allocates its own internal resources. Such a change in focus affects how organizational effectiveness is considered and managed. They suggested businesses will move from acting to reacting and from controlling resources to integrating resources. Current literature argues interorganizational collaboration is a strategic decision which requires organizing activities and investments, and managing relationships with other organizations (Alexiev, Volberda & Van den Bosch, Frans A. J. 2016).

In summary, previous academic literature does not give an exclusive definition for interorganizational network, as there are many types of networks and networks are continuously evolving. Interorganizational networks are usually determined by the structure of the network and relationships between the network members. ION's can involve public and private members. Based on the literature review, fundamental elements in interorganizational networks include relationships, structures, continuous change, attitudes, and motivations. Previous academic literature shows varying results of the manageability of networks and it is difficult to assign a manager for ION. Being a member of ION includes both positive and negative effects and it is difficult to determine monetary value for a membership in a network. However, the shared similarity in these definitions is that networks are used for orchestrating engagement, collaboration, and shared value.

3 ENGAGEMENT IN INTERORGANIZATIONAL NETWORKS

A large and growing body of literature has investigated interorganizational engagement from many different points of view: collaboration (Berardo, Heikkila & Gerlak 2014), value-creation (Le Pennec et al. 2018), innovation (Faems, Looy & Debackere 2005; Capaldo 2007; Alexiev, Volberda & Van den Bosch, Frans A. J. 2016), learning (Huxham & Hibbert 2008), knowledge transfer (Lane & Lubatkin 1998), and trust (Kasper-Fuehrer & Ashkanasy 2001; Thorgren & Wincent 2011). These different types of engagement can also support each other (Capaldo 2007). Engagement is one of the mechanism that allow the benefits of collaboration to emerge (Berardo, Heikkila & Gerlak 2014). *"True benefits of a network organization are obtained when the network is conceived of as a mini society of interdependent, reciprocal exchange relationships characterized by restraint of power, commitment, trust, solidarity, mutuality, flexibility, role integrity, and harmonization of conflict"* (Achrol 1996).

Earlier academic literature tends to give insights to the reasons for joining collaborative networks and the ways to design collaborative processes, but little information is given about the factors that drive networks members to engage with one another (Berardo, Heikkila & Gerlak 2014). Although current academic literature does not give a holistic interpretation of interorganizational engagement, this study approaches the diverse body of literature on interorganizational collaboration, communication, learning and trust. Emphasis is put on describing these concepts on a micro level and seeking ways to develop engagement through them. At the end of this chapter a holistic framework that combines all elements of interorganizational engagement in the context of ION's is presented.

3.1 Interorganizational collaboration, innovation and value creation

Many scholars see engagement in a network context as collaboration (Faems, Looy & Debackere 2005; Alexiev, Volberda & Van den Bosch, Frans A. J. 2016; Le Pennec et al. 2018). Interorganizational collaboration is collaboration between two or more organizations. Hardy, Phillips and Lawrence (2003) defined interorganizational

collaboration as *"cooperative interorganizational relationship that is negotiated in an ongoing communicative process that does not rely on market or hierarchical mechanisms of control."* They also underline that interorganizational collaboration should be separated from paid cooperation. Most of the earlier academic literature about interorganizational collaboration explains the structures (Möller & Rajala 2007) or the reason why stakeholders might initially get involved in the collaborative process (Berardo, Heikkila & Gerlak 2014).

Many researchers have studied the motivations to join interorganizational engagement. These motives include for instance, areal sustainability (Sharma & Kearins 2011), competitive advantage from new innovations (Alexiev, Volberda & Van den Bosch, Frans A. J. 2016), governmental projects (Gray 1985; Klijn & Koppenjan 2000; Berardo, Heikkila & Gerlak 2014), environmental change (Hsin-Mei Lin 2006) and benefits for internationalization (Vasilchenko & Morrish 2011). Even the members of the collaboration might enter collaboration with different understandings, beliefs and motivations regarding the collaboration (Sharma & Kearins 2011). Members for interorganizational collaboration are often found from social networks (Zhang & Elsner 2020). Furthermore, organizations are more likely to collaborate with partners that have good reputation in the network (Reagans & McEvily 2003).

Sharma and Kearings (2011) presented a critical interpretive investigation of interorganizational collaboration. Their research suggests by engaging in collaboration organizations gain many potential benefits. Organizations can for example build relationships, learn, build capacity, and save resources. On the other side there are many problems in implementing interorganizational collaborations. Many of these are led by the nature of collaboration. Organizations are often bias and might pursue their own interests, lack commitment for the collaboration, communicate inefficiently, and lack resources to collaborate fully. Full list of the problems and potential benefits of interorganizational collaboration according to Sharma's and Kearing's study is below in table 3. Similar problems have been identified also in previous academic literature. Vlaar et al. (2006) recognized problems of understanding between the collaboration participants, that arise from the differences in the culture, experiences, structure and industry of the participating organizations.

Table 3 Problems and benefits of collaboration. (Sharma & Kearins 2011)

Problems in implementing interorganizational collaborations	*Potential Benefits of Collaboration*
Power and politics	Learning
Power differences because of members' differences in knowledge, status, and resource base	Joint problem solving
Tendency toward preservation of self-interest	Joint innovations and value creation
Lack of "real" commitment to the collaboration	Efficiency
Resistance and conflict	Resource sharing
Distrust of others in the collaboration	Cost saving
Perceived nonneutral convener	Capacity building
Threat of competition from members	Survival
Negative collaboration history	Relationship building
Prejudices toward other organizations	
Ineffective and inefficient communication	
Lack of resources, including time, individual member commitment, and information for the collaboration	
Members' predominant adoption of a task focus as opposed to a communicative focus because of increased workload and pressure	

Moreover, Sharma's and Kearing's (2011) research gives thorough explanation of the problems and potential benefits of collaborations for sustainability. The results are important regarding this study as the motivations of Greenreality Network include creating sustainable economic growth to the area with green technology collaborations. The results of Sharma's and Kearing's study are summarized below in table 4. Most of the problems in collaboration are caused by the nature of collaboration itself and also the asymmetry of the collaborative organizations in resources, information, and expertise (Sharma & Kearins 2011). Main difficulty in searching for interorganizational collaboration is the ambiguity of the resources when a combination of different resources has causal connections in joint production (Hsin-Mei Lin 2006). There is a need to promote collaborative problem solving among private and public sector organizations (Gray 1985).

Table 4 Problems and benefits of collaboration for sustainability (Sharma & Kearings 2011)

Problems in Implementing Interorganizational Collaborations for Sustainability	*Potential Benefits of Interorganizational Collaboration for Sustainability*
Competing organizational interests and priorities on economic, social, and environmental dimensions of sustainability for the short and longer term	Enhanced understanding of the sustainability regulations and requirements
Differences in organizational visions of regional and/or local sustainability	Critical understanding of various pressures and urgency of sustainable development
Different levels of organizational commitment toward sustainability	More realistic expectations of institutional change
Differences in organizational expectations of collaboration for sustainability	Enhanced understanding of other actors' efforts in the social drive toward sustainability
Different levels of organizational knowledge and experience in sustainability planning and implementation	Exposure to other organization's sustainability culture, visions, and missions
Different organizational pace in the movement toward sustainability	Enhanced vocabulary and communication skills on sustainability
Lack of common vocabulary on sustainability	New and deeper relationships with stakeholders for sustainability
	Reduction of power differences in relation to sustainability
	Development of positive collaborative spirit around sustainability
	Insights into new problem-solving approaches on various sustainability issues
	Integrated development of regional and local sustainability policies and practices
	Greater ability to achieve sustainability outcomes that cross-cut different disciplinary, geographic, and organizational boundaries
	More efficient means of engaging with regional citizen stakeholders
	Greater legitimacy and reputation with respect to sustainable development of the community
	Greater capacity to withstand sustainability pressures
	Greater capacity to initiate regional- and local-level changes on sustainability

Sharma's and Kearings's (2011) study highlights it is difficult to focus on the main factors driving for sustainability due to the highly complex and communicatively distorted engagement processes in interorganizational collaboration. They also give managerial suggestions for overcoming some of the problems in interorganizational collaboration. Organizations should discuss and develop a shared understanding of sustainable development at the beginning of the collaborative process. Organizations should seek for answers regarding the members' understanding about sustainable development, how members prioritize three pillars of sustainability, what is the member organization's collective understanding about sustainability, and how they should be integrated across the three pillars of sustainability. Organizations should also create a vocabulary about the sustainability terms used in different organizations and agree to use the common terms. In addition, companies should discuss and agree on the goals of the collaboration. Vlaar et al. (2006) suggest problems in understanding can be avoided by using sensemaking in the early stages on the collaboration.

Whereas many researchers only discuss about the benefits and positive aspects of collaboration, Hardy and Phillips (1998) propose that interorganizational collaboration is not necessarily always needed, conflicts are not necessarily unsatisfactory and dynamics do not always give an accurate representation of the current situation. They argue that collaboration should be inspected more critically, especially when the organizations have conflicting goals or unequal power.

Value creation in collaboration

Firms engage in collaborative relationship to work together to add value or reduce cost in the exchange between the organizations (Andersson, J. 1995). Value creation results from actor's resource integration through complex interactions with other actors in the network (Pinho, Beirão & Patrício 2014). In value creation the interacting actors gain access to partner's complementary resources, which enables organizations to offer their own customers more extensive value and deepen their tie to their customers (Jaakkola & Hakanen 2013). It is usually impossible to assess monetary effect of value creation (Barringer & Harrison 2000). Le Pennec et al. (2018) propose that different types of value are created sequentially in a critical path. The critical path is continuum

of value creation instead of a strictly linear path. The path begins with associational value and develops through transferred and interactional value towards synergistic value creation.

There are multiple attributes that effect interorganizational value creation. Matinheikki et al. (2016) identified five network attributes that support value creation: centrality of leading actors, network density, tie strength, trust, and shared vision. These attributes support value creation by improving flow of information in the core of the network, securing project finance, and enabling strong and trustful relationship. Findings from Holm, Eriksson and Johansson's (1999) study support business relationships effect on value creation. Anoop and Tallman (1998) explain extracting value from collaboration requires shift from opportunism to aligning interactions with the partner firms.

Möller and Rajala (2007) argue that value creating process is important for any business network. Möller and Rajala distinguish three types of networks according to the value system on the networks: The first type is innovation networks, which are science and technology-based networks that carry out research. Innovation networks involve universities, research institutions and research organizations of major corporations and are not primary business networks but professional and social networks. The second identified type is dominant design nets which involve both competing and complementing companies that have the same technical vision. The third identified network type is domain application networks, which are formed to achieve business applications from new technology. Domain application networks are often driven by a hub company.

Innovation

Interorganizational innovation takes place in collaborative settings (Dong, McCarthy & Schoenmakers 2017). Innovation can be many things, even though it is often understood as the creation of new products and services or improvement of the existing ones. The term innovation can be used to describe different types of changes that occur in the organization. For example, changes in product or service application, markets it is served, the development of the product, or even the business model of

the firm (Johnson 2001). As innovation is a complicated term, academics have created supporting concepts to describe the diverse forms of innovation. Christensen and Clayton (2013) distinguish disruptive and sustaining innovations. Sustaining innovations improve the performance or capabilities of existing products and services. Whereas disruptive innovations, create something new with the use of disruptive technologies. The concept of stretching practices was introduced by Sydow and Müller-Seitz (2020), defined as an attempt to expand an established process to a new technological and organizational setting.

Innovations have traditionally been pursued individually by firms alone. However, many firms increasingly look for collaboration in their quest for new innovations (Dong, McCarthy & Schoenmakers 2017). Most of the innovation literature has focused on the perspective of single firms rather than ION's (Sydow & Müller-Seitz 2020). Hardy, Phillips and Lawrence (2003) revealed a positive relationship between innovative performance of companies and interorganizational collaboration. Their research showed that companies are more likely to create commercially successful new or improved products if they engage in various interorganizational collaborations. In addition, the results indicate that collaboration with customers and suppliers are associated positively with improved products and collaboration with universities is more related to new innovative products. Faems, Looy and Debackere (2005) carried out a research which shows similar results. Their study suggests interorganizational collaborative behavior relates to the innovative outputs of the organizations and companies are more likely to create new or improved commercially successful products when they engage in a variety of collaborations. Their research also distinguished a similar difference between collaborating with customers and suppliers versus with collaborating with universities.

Some network features support innovative processes better than others. Research shows that firms are more likely to be exposed to information which supports development of breakthrough innovation when they work with other central organizations in an alliance network (Dhanaraj & Parkhe 2006; Capaldo 2007; Dong, McCarthy & Schoenmakers 2017). Thus, firms which seek for innovative benefits must place their firm in the central of the alliance network. Secondly, research suggest a firm can broaden its collaboration by integrating public partners to its network as public

and private partners have different kind of knowledge to support innovation (Dong, McCarthy & Schoenmakers 2017). Thirdly, research indicates larger networks and networks which have been formed bottom-up achieve greater innovative performance (Thorgren, Wincent & Örtqvist 2009). Finally, research indicates the success of collaborative innovation process is based on collective learning and knowledge sharing among the members (Pekkarinen & Harmaaakorpi 2006).

Academic research suggests senior managers should adopt a portfolio approach and pursue multiple interorganizational innovative projects at the same time to get better results from interorganizational collaboration (Hardy, Phillips & Lawrence 2003; Faems, Looy & Debackere 2005). Dhanaraj and Parkhe (2006) highlight the importance of designing collaborative innovation processes with attention to both the nature if the problems and the nature of the actors involved.

Regional innovative capability consist of the cooperation of regional actors and their innovative capabilities (Pekkarinen & Harmaaakorpi 2006). Alexiev et al. (2016) carried research on organizational environments' effect in innovative projects. They developed a model to describe organizational environment based on previous academic research. The model consists of three factors: environmental turbulence, market heterogeneity and competitive intensity. The model helps managers to analyze their organizational environment and decide if they want to participate in collaborative innovation efforts. The results indicate market heterogeneity affects the importance of collaborative innovativeness the most of these factors. Further, companies face difficulties innovating alone on fragmented markets. Environmental turbulence causes companies to seek for innovation. Competitive intensity might make collaborative innovativeness more complex as managers must also consider the threats of the competition. The results of the study did not indicate a strong relationship between the competitive intensity of the environment and the collaborative innovativeness. The results also showed that companies that use collaborative innovation also excel in their internal innovation. In addition to network features and organizational environment also some actions within the network support innovative processes. Mutual knowledge, social contents and investment specific to the relationship support the lead firms capability to innovate (Capaldo 2007).

3.2 Interorganizational communication

Roughly divided communication can be divided into two main categories: Intra organizational and interorganizational (Griffith & Harvey 2001). This study concentrates on communication across organization boarders. Sheng, Brown and Nicholson (2005) conceptualize communication as a multidimensional construct, that reflects both instrumental and social communications. Shumate et al. (2016) describe how the study of interorganizational communication has evolved through time. According to their study interorganizational communication research was originally based on sociology and management. Today interorganizational communication research often concentrates on supply chain communication (Paulraj, Lado & Chen 2008). Ryynänen (2013) argues extant literature about network theory lacks the understanding of the role of internal communication in network insight development even though research has proven that internal communication plays important role in some aspects of it.

One form of communication is collaborative communication which is a combination of intensive, relationship-building communication facets. Collaborative communication can be used to create a positive atmosphere of mutual support, which helps to create volitional compliance between partners (Mohr, Fisher & Nevin 1996). Shumate and Contractor (2013) recognized four distinct types of interorganizational communication relationships: affinity, flow, representational, and semantic. Affinity relationships occur in collaborative settings and are essentially communicative in nature. Flow relationships occur when organizations have transactions of information, messages, or data. Representational interorganizational communication occurs when organizations communicate about other organizations to a third party. Semantic interorganizational communication focuses on shared meaning or symbol use among organizations. Interorganizational communication relationships are complex in network settings. For instance, two organizations can simultaneously collaborate in a project, exchange messages, endorse each other publicly. and have similar visions. (Shumate et al. 2016)

Monge et al. (1998) introduced a public goods-based theory which describes how interorganizational alliance-based communication and information of public goods

takes place. Their theory suggests these goods offer participants collective benefits that are nonexcludable, as they are available for all partners and they are jointly supplied, as partners that use it and noncompeting. The two most common types of goods produce are connectivity and communality. Connectivity is the ability of partners to directly communicate with each other through the information and communication system. Communality is the availability to a commonly accessible pool of information for all partners.

Public sector managers usually have issues with communication in collaborative projects (Huxham & Vangen 2000). When there are people involved conflicts are part of the communication. Conflicts between organizations are not always destructive and may even have constructive consequences (Assael 1969). Scholes and Clutterbuck (1998) gave a thorough explanation of communication with different stakeholders. In the article Scholes describes that most stakeholder groups manage stakeholder relationships mainly with outgoing messages from the organizations point of view even though at least equal emphasis should be put upon to listening to the different stakeholder's ideas and opinions. Sharma and Kearings (2011) suggest organizations should create and agree on a shared vocabulary to support collaborative efforts and communication to overcome communicational issues. Andersson (2016) argues there are certain communication patters and barriers which occur in interorganizational projects. The barriers she examined were technological concerns, micro-level discussions, social influence, limited bridging activities, and openness to change.

Communication in digital platforms

Communication in organizations has changed drastically over the years. Digital technology has made it possible to communicate through a vast number of different channels, which has changed the way people communicate and also the nature of social dynamics within social groups (Young & Hinesly 2014). Digital platforms are continuously more important in communication but many organizations still struggle to benefit from them (Hossain & Lassen 2017). Engagement in digital platforms has been researched from multiple different points of view; innovation (Sedera et al. 2016), crowdsourcing (Bonabeau 2009), collective intelligence (Gregg 2010) and technical issues (Berardo, Heikkila & Gerlak 2014).

Digital platforms provide different kind of tools and techniques to handle data processing and cooperation. These platforms can be used for many different tasks. Hossain and Lassen (2017) identified seven major categories of digital platforms: (1) Problem-solving platforms, (2) Ideation platforms, (3) Co-creation platforms, (4) Online marketplaces platforms, (5) Public crowdsourcing platforms, (6) Collective intelligence, and (7) Freelance and microtask platforms.

Digital platforms provide both new possibilities and challenges for organizations (Hossain & Lassen 2017). Thus, managers need to consider many issues when planning the use of collective intelligence tools (Bonabeau 2009). Information technology can encourage collaboration by forming trust and creating direct channels for communication such as feedback (Scott 2000). It is important that ICT systems enable expressions of nonverbal and emotional cues in digital communication for the creation of trust between interorganizational communication (Kasper-Fuehrer & Ashkanasy 2001). However, technical issues can prevent high-quality dialogue and engagement (Berardo, Heikkila & Gerlak 2014).

3.3 Interorganizational learning

Research about learning in interorganizational context has been studied from different perspectives. Some scholars use the term learning (Håkansson, Havila & Pedersen 1999; Huxham & Hibbert 2008) whereas others prefer knowledge transfer (Lane & Lubatkin 1998; Easterby-Smith, Lyles & Tsang 2008). This chapter discusses both from the perspective of interorganizational engagement and factors effecting it. The chapter begins with discussion about learning and continues with knowledge transfer.

Learning can be analyzed from the levels of individual, group, and organization (Knight 2002). Furthermore, Knight (2002) distinguishes differences between different terms regarding learning in a network context. According to her study interorganizational learning refers to learning on a context of groups or pairs of organizations that are collaborating actively. Whereas the term learning networks refers to a group of organizations that interact with each other with the purpose of learning from one another and through their activities together. She also described the term network learning as *"learning by a group of organizations as a group."*

Håkansson, Havila and Pedersen (1999) explored what supports successful learning in a network context. Their study suggests organizations can learn from each other and the extent of learning is highly related with the existence of the connections between the relationships. In dyadic settings two groups of factors influencing learning were identified. The first group is the characteristics of the companies and the second group is the type of the relationship. The characteristics of the dyadic relationship affect how the parties in the relationship fit together. Both companies learn more when the counterparts are interested in teaching and learning. The type of the relationship also affects learning in the relationship. For example, the age of the relationship affects how much new information is shared and how much trust is between the counterparts. In addition, it has been commented that the context of the relationship affects the learning, but it has been researched less. As networks are dynamic by character it is important organizations develop structures that support their learning capabilities (Möller & Halinen 1999). Networks can also have “memory” which allows the members to draw on the accumulated information that has been accrued through past relationships within the network (Ahuja, Soda & Zaheer 2012).

Scott (2000) carried out research about information technology’s effect on interorganizational learning. Her research proposes that information technology facilitates interorganizational learning via feedback mechanisms, tracking performance, and improving collaboration. In local context, stimulating the learning process with local institutions and other business associations can increase the learning but it does not guarantee the success for SME’s (Vanhaverbeke 2001).

According to literature review carried by Huxham and Hibbert (2004) collaboration participants may have different motivations and actions towards learning. These actions include for example, exploiting partner, excluding learning, exchanging with partner, and exploring together with partner. According to their study extant literature has determined three basic attitudes towards learning: selfish, sharing, and sidelined. Later Huxham and Hibbert (2008) carried out additional research and summarized their key findings about attitudes towards learning in interorganizational collaboration in six main points. (1) Attitudes towards learning in collaboration include elements of all three basic attitudes, selfish, sharing, and sidelined. (2) Attitudes are complex

bundles of different stances in giving or taking. (3) Different partners have different perceptions of other partner's attitudes. (4) Individual's attitudes of knowledge sharing may differ from organization's perceptions. (5) Shared information might not reach all the people who need it because attitudes to knowledge sharing between organizations may not be mirrored. (6) Even the most dominant attitudes can change and evolve over time as the collaboration progresses.

Organizations can both learn from each other and learn together in interorganizational collaboration (Huxham & Hibbert 2004). The former is called knowledge transfer and the latter knowledge creation. Easterby-Smith, Lyles and Tsang (2008) determined a theoretical framework of dyadic knowledge transfer which is presented in figure 3. Their theoretic framework consists of four factors: the resources and capabilities of donor and recipient firm, nature of the exchanged knowledge, and interorganizational dynamics. The donor firm must have absorptive capacity and motivation to teach the recipient company. At the same time the recipient company needs to have absorptive capacity and motivation to learn. The absorptive capacity of the recipient organizations is an outcome of is culture, past experiences and knowledge retention capabilities (Lane & Lubatkin 1998). People are more likely to absorb knowledge if they are already familiar with the subject and the source and recipient have something in common (Reagans & McEvily 2003). Knowledge transfer can take place in different directions in the relationship and both the donor and recipient need to have intra-organizational transfer capability (Easterby-Smith, Lyles & Tsang 2008).

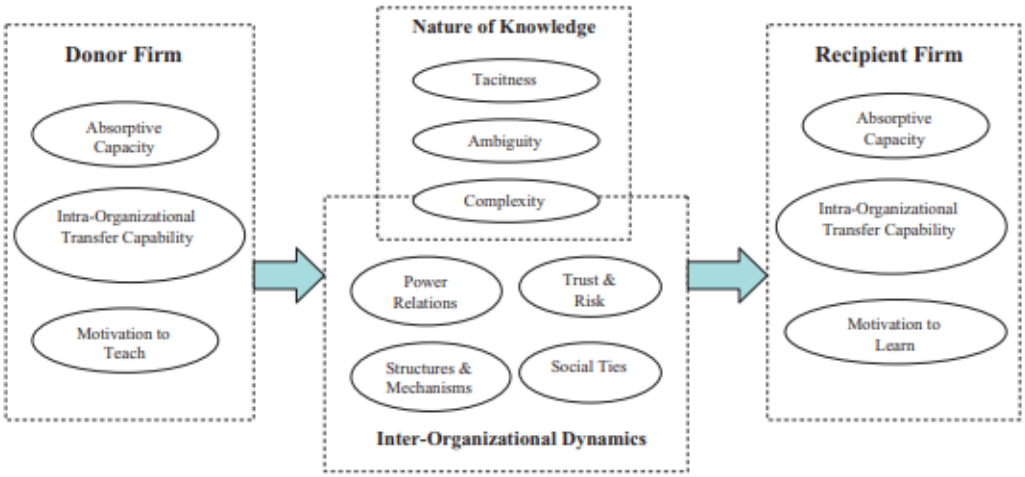

Figure 3 Factors influencing interorganizational knowledge transfer (Easterby-Smith, Lyles & Tsang 2008)

The interorganizational dynamics of the donor and the recipient firm also affect the knowledge transfer. Easterby-Smith, Lyles and Tsang (2008) identified four main factors to describe the interorganizational dynamics: power relations, trust, structures and mechanisms, and social ties. The donor and the recipient are often asymmetric regarding power as the donor is often in a more powerful position. Finally, also the nature of the knowledge that is transferred affects the whole transfer process. These results are similar to those reported by Reagans and McEvily (2003). Their research suggests especially two network structure features; cohesion and range facilitate knowledge transfer. The results show strong network ties support sharing of all kinds of knowledge and it is extremely important in sharing tacit knowledge. When taking part in knowledge transfer activities organizations need to notice it is not free. The cost of knowledge transfer is the time and resources spent helping others to understand the knowledge (Reagans & McEvily 2003).

3.4 Interorganizational trust

Interorganizational trust is studied from many aspects as it affects interorganizational engagement in many ways. While a variety of definitions of the term interorganizational trust have been suggested, this study will use the definition first suggested by Zaheer et al. (1998) who saw it as a collectively-held trust orientation toward the partner organization. The common factor in these studies is that interorganizational trust is considered to help collaboration and enable organizations to form deeper relationships (Achrol 1996). Interorganizational trust is associated with many positive effects: lower costs of collaboration (Zaheer, McEvily & Perrone 1998; Gulati & Nickerson 2008), higher economic performance (Zaheer, McEvily & Perrone 1998; Gulati & Nickerson 2008), improved management of knowledge transfer (Li, L. 2005), positive interfirm collaboration (Arnaud & Mills 2012), better results in interfirm innovation (Capaldo 2007), and successful value creation in a relationship (Holm, Eriksson & Johanson 1999; Hsin-Mei Lin 2006; Matinheikki et al. 2016). Communication of trustworthiness in interorganizational virtual context is extremely important because these organizations do not have traditional hierarchical management processes (Kasper-Fuehrer & Ashkanasy 2001). Trust offers sociological element of exchange that offers more flexibility in operation and reduces coordination costs by reducing conflicts (Hsin-Mei Lin 2006). Trust and desire to remain in the ION minimizes taking advantage of

the networks participants (Barringer & Harrison 2000). Due to the many positive aspects of interorganizational trust, in this study it is considered as an enabler for effective interorganizational engagement. Trust is considered to affect the quality and amount of engagement and support the management of the network.

Scholars suggest the importance of trust is so significant it should be taken to notice in organization's strategies and managerial decisions. Holm Eriksson and Johanson (1999) explain trust and commitment enable parties of a relationship to engage in a value-creation process. Thus, they argue organizations strategies should put focus on creating interorganizational trust and commitment. Håkansson & Snehota (1995, 368) see trust as government mechanism in business networks which is required for authority to work as a government mechanism. Gulati and Nickerson (2008) gave a detailed explanation of trust's effect on government mechanisms. Their study reveals trust significantly affects the governance of interorganizational networks. Preexisting trust among organizations increases the probability of less formal and less expensive mode of governance. Their study also indicates trust enhances exchange performance of the collaboration regardless of the chosen mode of governance.

Based on previous academic literature it can be concluded, effective interorganizational collaboration requires trust (Scott 2000) and trust is beneficial for interorganizational relationships. In addition, previous literature also describes how trust is built between organizations and how trust should be nurtured. Thorgen and Wincent (2011) suggest trust development happens through direct communication, open information sharing, keeping secrets, having a trustworthy reputation, integrating of operations, creating efficient collaborative routines, and acquiring and integrating each other's specific skills. Sheng, Brown and Nicholson (2005) argue both the substantive content of communication and the extent of communication can shape the level of trust between organizations. According to Vangen and Huxham (2003) organizations must continuously nurture their collaborative interorganizational processes to gain collaborative advantage and trust is an important aspect in it. Their research indicates trust building is problematic. The process of building trust is cyclical as every positive outcome builds on itself, and incrementally over time trust is built in a virtuous cycle (Vangen & Huxham 2003; Capaldo 2007). Adaptability, quality, and security are necessary resources for the achievement of collective competence

because they produce trust, which is necessary to sustain positive engagement in interfirm collaboration (Arnaud & Mills 2012). Kasper-Huehrer and Ashkanasy (2001) describe three issues which need to be taken into account to overcome issues in trust building in an interorganizational virtual context. The issues are (1) communication of trustworthiness facilitated by trustworthy ITC systems, (2) establishing shared strong business ethic, and (3) a common business understanding.

Whereas most of the interorganizational trust literature sheds light on the positive aspects of trust and its impact on collaboration, there are also studies which describe the lack of trust and its disadvantages in interorganizational context. Thorgen and Wincent (2011) describe what kind of negative situations can occur because of interorganizational trust: (1) Counterparts of the relationship might have difficulties in addressing issues in the relationship because they do not want to ruin the “good” parts of the relationship. (2) Organizations might give and receive overly positive feedback because they are prioritizing the continuation of the relationship. (3) Organizations might monitor the relationship too little, which will lead to little knowledge transfer. (4) Companies in the relationship forget to look outside the relationship for newer advice or actors as they are too oriented towards their relationship. Thorgen and Wincent’s research suggests trust is needed in collaboration, but companies can be “blinded” by trust. Most of the previous literature highlight trust’s importance in collaboration. Vangen and Huxham (2003) suggest trust is not essential for collaboration even though it supports it. In reality, there are many situations where practitioners feel insufficient trust towards others, but they still continue in the collaboration. This differs from the academic literature, as most of the scholars only concentrate on the importance of trust.

3.5 Framework combining ION and interorganizational engagement theory

None of the existing frameworks provide a comprehensive fundament for conducting the empirical part of this study. Thus, a framework that combines network theory with interorganizational engagement was created. The visualized summary of the literature review is in the figure 4 below. The concepts of interorganizational networks and interorganizational engagement are highly interdisciplinary and complex by nature. Thus, the framework is not comprehensive in all network settings.

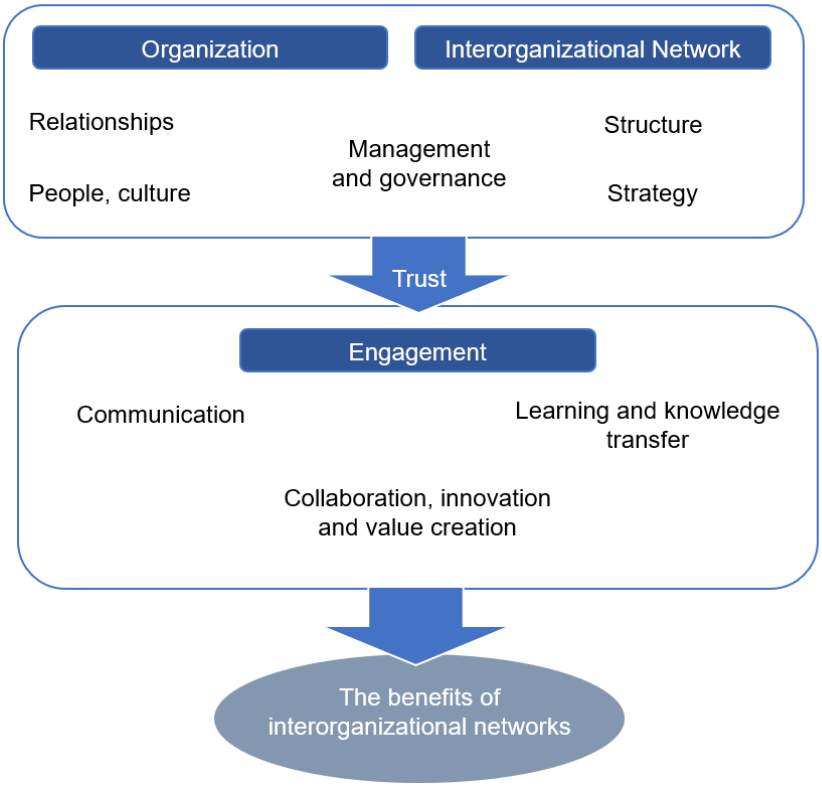

Figure 4 Framework combining ION and interorganizational engagement theory

As the framework demonstrates ION's consist of organizations, people in the organizations and their cultures. ION's have structures and strategies and they can be managed to some extent. Interorganizational engagement includes the elements of communication, collaboration, and learning. Trust has a central role in interorganizational engagement in the context of ION's as it is created between people, it supports management, and it also affects communication, collaboration, and learning. In this study engagement is seen as an enabler for the benefits of ION's.

4 RESEARCH DESIGN AND METHODS

This part of the thesis describes the empirical part of this qualitative study. This chapter begins by first briefly describing the research design. Second, the case of this study is described. Next the data collection and analysis methods are explained. Finally, the reliability and validity of the research are discussed. The aim is to explain the case and the methods of the research as transparently as possible and justify the decisions made in the research (Hirsjärvi et al. 2009, 261).

4.1 Research design

This study is a qualitative single case study. Qualitative method was chosen as it is usually used to express information which relates to feelings, processes, actions or meanings in words and images (Hayhow & Stewart 2006). The data for this study is gathered using semi-structured interviews. The themes of the interviews are based on the theoretical background of the study.

This case study includes a study of a real-life case in contemporary context, with detailed in-depth data collection involving multiple sources of information (Creswell 2013, 97). The case in this study consist of a local business network, Greenreality Network. This research is a as single instrumental case study, as there is one bounded case in the research (Creswell 2013). Case study approach is beneficial as there is intimate linkage with empirical evidence: novelty, testability and empirical validity (Eisenhardt 1989).

This study uses abductive approach to developing theory. Abductive approach is a mixture of inductive and deductive approaches (Dubois & Gadde 2002). Inductive approach relies on grounded theory where themes patters and concepts are identified from theories (Saunders, M., Lewis & Thornhill 2016, 145). Deductive approach develops propositions from current theory and tests them in the real world (Dubois & Gadde 2002). Inductive approach was used when themes were planned according to the theoretic framework. Deductive approach was used when new themes arise in the data analysis. For instance, initially this study was supposed to only concern internal

communication of GRN, but the theme of visibility arose from the interviews and it was added to the analysis.

4.2 Case description: Greenreality Network (GRN)

Greenreality Network (GRN) is a South Karelian business-oriented network. The network consists of energy and environmental actors which are local businesses, municipalities, and educational institutes. The network has 46 members and is coordinated by the city of Lappeenranta. Greenreality is ecological thinking, knowledge, responsible choices, and actions towards sustainable future. Greenreality Networks objectives are to raise investments in the region, promote local companies, encourage networking, provide infrastructure for co-creation, present high-tech research, and innovations nationally and internationally. GRN is a deliberately created intentional network (Ritter, Wilkinson & Johnston 2004). (Greenreality 2016)

Engagement in Greenreality Network

The coordinator of the network, the city of Lappeenranta, manages the internal and external communication of the network. City of Lappeenranta arranges events and webinars for GRN members to promote collaboration, enable learning and help members get to know one another better. The network also has a communication subgroup that consist of network members. However, the subgroup is not very active. The internal communication of the GRN network is difficult to determine and manage as all communication which happens between members is considered internal communication. Currently the internal communication of the network mostly happens on events and digital channels of the network. Covid-19 has prevented GRN from organizing traditional events and currently all events are held as webinars of digital meetings. Digital platforms for internal communication are SOLVED and Teams. Solved is a platform for sustainability-related knowledge work, which allows to find, hire and work with experts (Solved 2020). Teams is a platform for discussion, sharing files. and for making announcements (Microsoft 2020). GRN's Teams platform has also subgroups which members can join to discuss more specifically about certain subjects. At the beginning of 2021 existing subgroups were communications group, solar group, and construction group. Some of the groups are more active than others.

The external communication is managed by the city of Lappeenranta's marketing coordinator. Marketing activities of the network are mostly done through social media. GRN has its own Facebook, Instagram, Twitter, and LinkedIn accounts where it shares information for the inhabitants of Lappeenranta. GRN also has its own webpages that give valuable information about the network's activities.

Previous research in Greenreality Network

Kryzhavnivska (2020) has carried out research in Greenreality project in 2020. In her research Kryzhanivska discovered multiple challenges of the network. One issue for the network is that the members do not always find the time and motivation to participate and commit in the network activities. Another challenge is that members do not engage in value creation enough. This is a common problem for networks which is often caused by daily-life challenges. Identified challenges include, lack of time, blocks in knowledge sharing, lack of skills to share information and communicate, lack of trust and visibility and, finding common goals and strategies. (Kryzhanivska 2020)

Additionally, Kryzhanivska uncovered many challenges in the current communication of the network. The research indicated that communication in the network is currently slow, as emails often get lost and there are few discussions about the potential project ideas. The companies saw digital communication as a gateway to the network and saw it as an enabler for social networking, sharing feedback, promotion, finding resources, saving time, and international digital communication and collaboration. However, some respondents of the interviews were skeptical of communicating on digital platforms. Reasons for skepticism included IT-security concerns, usability mistakes, and lack of experience. Interviewees also highlighted positive opportunities of digitalization could be utilized in more modern ways. All interviewees were interested in getting to know latest technologies and intercorporate these into their daily work. The results of the interviews indicated that digital tools used for communication should be something most of the members already use. Company representatives do not want to make many new users and passwords for different accounts. Even though, the members saw digitalization as an enabler for communication, they still value physical interaction to meet, discuss, develop new

products and services and brainstorm together. Furthermore, research addresses that companies would like to benefit from GRN's visibility in terms of marketing. (Kryzhanivska 2020)

4.3 Data collection

The process of collecting data in qualitative study is a social interaction, which involves the researcher and the participant (Hayhow & Stewart 2006). The data used in this research was collected using semi-structured interviews carried among the Greenreality Network members. As the interviews were semi-structured, the form and order of the question could change and interviewees could introduce new subjects to the interview (Koskinen, Peltonen & Alasuutari 2005, 104). The questions asked in the semi-structured interview were mostly open-ended and the participants could answer the questions in their own words. The interview questions involved both thematic and dynamic questions. Thematic questions are used to guide the interview towards the main subject if the interview and dynamic questions are used to positively support the interaction between the interviewer and the interviewee (Hirsjärvi & Hurme 2001, 105)

The semi-structured interview was constructed around four main themes: (1) Basic information of the organization, (2) Experiences, collaboration, and trust in GRN, (3) communication and learning in GRN, and (4) management and strategy related to GRN. The themes were formed based on the theoretical framework of the research (Tuomi & Sarajärvi 2018, 88). Interview was chosen as the data collection method because interviews enable to directly interact with the interviewed person and makes it possible to examine the motives behind the answers (Hirsjärvi & Hurme 2001, 34). Interview is a suitable data collection method in multiple situations. According to Hirsjärvi and Hurme (2001, 35) interviews have many benefits in data collection. They argue interviews are great method when the researcher wants to gather deeper knowledge, as there is a possibility to ask further questions during the interview. Secondly interviews are suitable for gathering data about large context or about a context that is not already well-known. Further, in interviews the interviewed person is an active part of the research and has the possibility to freely take up subjects in the interview which might arise new issues or topics for the research. It is important to also understand the downsides on interviews to avoid mistakes that lead to negative

outcomes. Hirsjärvi et al. describe the downsides of interviews: It takes a lot of skill and experience from the interviewer to get good data from the interview. Interview data is often quite informal, and it might be difficult to analyze due to the nature of the data. In addition, interviews take a lot of time and resources and might even cause costs for the researcher.

The execution of the interviews in this study follows steps Creswell (2013, 163-166) introduced for the data collection process. (1) Decide on the research questions, (2) identify potential interviewees, (3) determine the type of the interview, (4) use adequate recording procedures, (5) design and use a protocol for the interviews, (6) refine interview questions and the procedures with pilot tests, (7) determine places for the interview, (8) use a consent form and (9) use good interview procedures. The interviews were carried in Finnish because it was the native language of both the interviewees and the interviewer.

In this study, the interview questions were planned according to themes. Planning the themes for the interview questions was a process which evolved through the entire research design. The themes were planned according to research problems and main issues categorized in the theoretical background. Research questions were based on these themes and the gathered data was analyzed and categorized using the themes. Figure 5 below describes this process based on Hirsjärvi and Hurme's model (2001, 67).

Figure 5 Using themes in the research process. (Hirsjärvi & Hurme 2001, 67)

Purposeful sampling was used to choose the companies for the interviews, because the case network has many types of companies as its members. Some of the member organizations are more active in taking part and sharing their opinions about the network. Less active organizations do not share their opinions for the network. Thus,

purposeful sampling was used to find different types of companies. A matrix was created to help the sampling process. The matrix is presented below in figure 6.

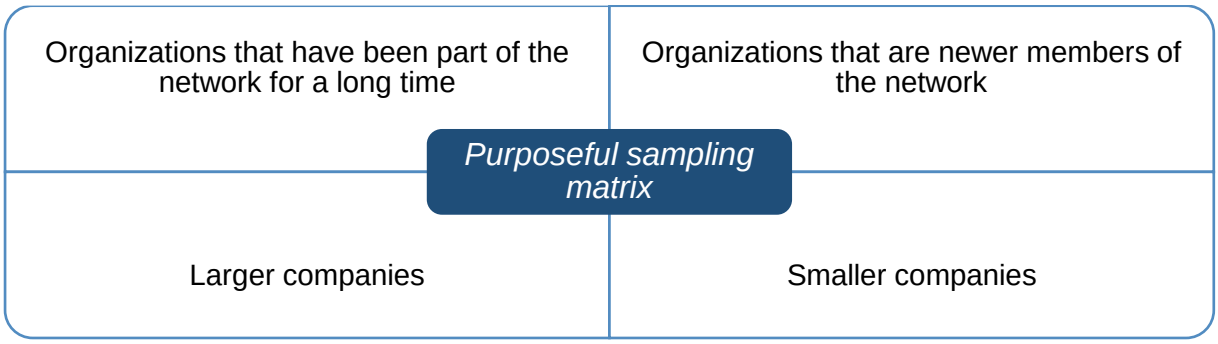

Figure 6 Purposeful sampling matrix

The case Network, Greenreality Network, has been active for eleven years and the members vary from large multinational firms to new local startups. The point of purposeful sampling is to include different types of companies to the research; thus, the size of the company and the length of the membership were chosen as the sampling variables. A person who works as the coordinator of the network helped to identify suitable network members. After the interviewees were chosen, they were sent an email invitation for the interview. The invitation email was constructed based on Gillham's (2005, 51) invitation model to make sure the respondents have all necessary information to make the decision of taking part in the interview. Together eleven invitations were sent to the preferred organizations and nine member representatives answered they are eager to take part in the interview. Two organization representatives wanted to include an additional representative in the interview as they felt they might not be able to answer all the questions alone. From the nine interviewed organizations two were newer members that had joined GRN within two years and seven were older organizations that had been GRN members for longer than two years. The size of the organizations was determined based on the number of staff the organizations had. From the nine interviewed organizations three were determined as large organizations as they had more than 100 employees and the rest were smaller organizations with less than 20 employees. The distribution of the sampling matrix describes the network well because there are more old members than new members and more small organizations than large organizations in the network.

The interviews were continued until there was saturation in the answers. Saturation stands for a situation where the collected data starts to be repetitive and new interviews do not bring relevant information for the study (Eisenhardt 1989). Saturation is used to determine discontinuing or analyzing data and arguing further data collection is unnecessary (Saunders, B. et al. 2018). In this study, the interviews were continued until the gathered data would provide answers to the research questions and ensure the data's trustworthiness. The data started to give repetitive answers to the research themes after the sixth interview. Three more interviews were carried to make sure new information does not emerge from the interviews. Combined nine interviews were carried to ensure saturation has been reached.

4.4 Data analysis

One of the problems in qualitative methodology is the volume of the information researcher has to make sense of (Hayhow & Stewart 2006). Thus the planning of the research and selection of data analysis methods is vital for the research (Robins & Eisen 2017). This study uses abductive approach to developing theory. First, inductive analysis was used to examine the research material in multilateral and detailed way in order to find unexpected findings (Hirsjärvi et al. 2009, 164). This was done by systematically going through the literature and creating themes for the interviews and coding based on the literature review. Later deductive approach was used to develop propositions from current theory and test it with the empirical data (Dubois & Gadde 2002). In this research deductive approach was used first when additional codes arise from the empirical data. Later theoretical background was revisited after the empirical findings showed interorganizational engagements role as an enabler for benefits.

In this study the interview data was audio-recorded and transcribed afterwards. The interview data was transcribed by a professional transcribing service to ensure high-quality transcribing. The data analysis was carried in Finnish because the interview data was in Finnish as it was the native language of both the interviewees and the interviewer. Furthermore, only minor details of the interviewed people and the companies they work in are involved to make sure the interviewees identity is concealed.

NVivo Qualitative Data Analysis Software was used in this research to make sense of the vast amount of interview data. Qualitative data analysis software was used because it allows researcher to analyze larger amounts of data faster and in more complex ways (Robins & Eisen 2017). Using NVivo during the analysis of qualitative research helps to manage data and ideas, query data, visualize data, and report from the data (Bazeley & Jackson 2013). In this study NVivo was used to analyze the empirical data gathered during the interviews. The analysis of the research data included reading, coding, reflecting, visualizing, and organizing the qualitative interview data. Quotations were used throughout writing the analysis to ensure the transparency of the analysis. Quotations were translated from Finnish to English by the researcher who is a native Finnish speaker.

From the methodological perspective this research follows Gioia's, Corley's and Hamilton's (2013) method. First, initial data coding was done maintaining the integrity of 1st order informant-centric terms and a comprehensive compendium of 1st order terms was developed. Codes are sentences and words in the transcribed data that interviewees have spoken in their interviews. Second, the 1st order codes were organized into 2nd order theory-centric themes. Third, terms, themes, and dimensions were assembled into a data structure. Fourth, static data structure was transformed into dynamic grounded theory model and the data was visualized. Finally, additional consultations to the existing literature was conducted to refine the articulation of the emergent information.

NVivo enabled the transparent and efficient data analysis through the entire process of coding data. To further support the transparency of this study the final themes of the codes are introduced in appendix 3. Furthermore, examples of coding are presented in appendix 4.

4.5 Reliability and validity

The idea of qualitative research is to produce similar results other researchers would reach in the same situation (Hayhow & Stewart 2006). Reliability and validity are used to examine whether the results of the research can be trusted (Koskinen, Peltonen & Alasuutari 2005, 253). In this study concern for reliability and validity pervaded through

the entire research process (Lee & Ling 2008, 232). The researcher familiarized with the concepts of reliability and validity already in the early stages of research and kept them in mind while planning and carrying out the research to ensure trustworthy results (Koskinen, Peltonen & Alasuutari 2005, 253).

Reliability is considered to concern the manner in which the raw research data is transformed into analyzable data (Lee & Ling 2008, 237). It is important to use consistent methods and not let researchers own opinions guide the analysis to enable high reliability of the research. Reliability consist of four sub features (1) congruence, (2) accuracy of the measurement instrument, (3) objectivity of the measurement instrument, and (4) continuity of the phenomenon (Koskinen, Peltonen & Alasuutari 2005, 255). In this study the transcribing of the interview data was done by professional transcribers and straight quotes from the collected data have been added to the analysis to enable high reliability.

Validity on the other hand is considered to be concerned with how well the conclusions reflect the research data and how justifiable the conclusions are (Lee & Ling 2008, 238). There are two types of validity. Internal validity describes how logical the interpretation of the researcher is and external validity describes how well the results fit in the existing results in the literature (Koskinen, Peltonen & Alasuutari 2005, 254). In this study internal validity was increased by comprehensive analysis of previous literature to create the theoretical framework and themes for the research. Additionally, all decisions and phases of the research have been explained transparently throughout the entire process. External validity of the research was supported with matching the empirical findings with the previous literature. However, the external validity of this research is limited as this is a single case study and the number of interviews is only nine.

5 FINDINGS

In this chapter, the findings of the interviews are analyzed, and results of the study are presented. The results are reflected to previous literature to deepen the analysis. The findings are structured based on the themes of the theoretical background and the interviews. Further conclusions and discussions are presented in chapter 6 conclusions.

Direct quotations from the interviews are used to support the analysis in a transparent way. The quotations from the interviews have been translated from Finnish to English. In the quotations three dots (…) indicate a word or a paragraph has been deleted because it is insignificant and square brackets [ ] are clarifications made by the interviewer. All quotations have been anonymized to protect the anonymity of the interviewee. The chapter includes several tables. In the tables asterisk-symbol (*) is used to display how many different interviewees mentioned the same thing. The number of asterisk-symbols indicate the absolute number of interviewees that mentioned the subject.

5.1 Interviewees relationship and activities in GRN

The interviewees were selected using purposeful sampling matrix (Figure 5). The objective was to interview different types of network members based on the size of the company and the length of their network membership to gather a sample that best presents GRN. Table 5 below presents the interviews based on the organization type, the interviewees role in the organization, the length of the membership, size of the organization, and the length of the interview. In this study organizations that have been members for less than two years are considered to have been GRN members for short time and organizations that have been members over two years were considered to have been members for long time. Further, members that have over 100 employees, were considered large and members that have less than 20 employees, were considered small. The length of the interview was measured by the length of the Teams meeting, as all interviews were carried online on Teams. The average length of interview was 46 minutes. The distribution of the organizations is suitable as most

of GRN members are companies, most members have been members for a longer time and most of the members are small by size.

Table 5 Interview data

Type of organization	*Role in the organization*	*The length of membership*	*Size of the organization*	*The length of interview*
Company	Production Manager	Long	Large	34min
Company	CEO & Founder	Long	Small	50 min
Company	Chairman and Founder	Long	Small	58 min
Company	CEO and Founder	Long	Small	50 min
Company	CEO	Long	Small	57 min
Company	CEO & marketing manager	Short	Small	40 min
Company	Salesperson	Short	Small	35 min
Learning institution	Assistant Headmaster & Head of Technology Department	Long	Large	57 min
City	Engineer	Long	Large	34 min

All the interviewees worked in significant roles in the companies they represented. The interviewees worked in the following roles: CEO, founder, production manager, head of technology department, engineer, salesperson, assistant headmaster and marketing manager. All the interviewees were in contact with the network and some of them have either currently or previously been part of the networks steering group or even worked as the chairman of GRN.

Organizations actions in GRN

Interviewees were asked if they have any instructions towards GRN membership to see how they manage their relationship with the network. Some of the network members had determined guidelines for GRN related tasks. These guidelines include dealing tasks among different roles and giving areas of responsibility for certain employees. However, majority of the network members has not determined how their staff should take part in the network activities or they have not given any instructions

about the network for their staff. This indicates, companies have different approaches to network membership and managing their relationships in the network.

> *"Actual staff knows we are part of the network, but they do not work actively in it. People who work in management, sales, and marketing roles have more understanding about the network."*

> *"We have shared our tasks regarding [GRN network]. (…) We wanted to include the most important people in the networks to disclose our expertise for the network members"*

> *"We have not given advise [for our staff] on how to act [in GRN]"*

Expectations and goals for GRN membership

Data analysis indicates the members of GRN have joined the network with different expectations and goals. The most common reason for becoming a GRN member was that the company wanted to network within the local business life and become more known for other companies in the area.

> *"It is raising our awareness about what is happening in the area and raising other [members] awareness about what is going with us."*

> *"We want to raise our own awareness of what is happening in the area and make others aware of what is happening with us and [pursue] positive collaborations."*

One popular reason for joining the network was visibility and its positive effects on business. Members describe visibility and positive publicity helps them recruit talents for their company and it supports their own marketing efforts.

> *"We thought maybe something amazing would happen for us. Maybe a (…) venture that we could do together with a network member, where we could work together as partners and receive publicity."*

"We want to be seen as an attractive employer. We are currently competing about employees. (…) We want to portray that we are good employer."

"[Visibility] makes our recruitment easier, people know about us. We already know our customer in the area, so it does not affect that, but it affects our personnel recruitments."

Another reason for joining GRN network was that company wanted to influence local decision-making.

"Before joining the network, we felt like our interests were not heard [locally] (…)."

Companies have also joined the network when other network members have encouraged them to join. Also, one reason for joining was that company thought they could receive some surprising positive outcomes they are not aware of if they are not part of the network.

"We took part in a (…) project (…) and we were suggested that this network is worth taking part in, as there are multiple members and we could possibly find new opportunities from the network. So, I joined."

"We joined to see if some opportunities would emerge, as the cost was not that high. But to be honest we have taken part in [other networks] (…) more actively."

Table 6 below presents an overview of the members expectations when they joined GRN and their current objectives from the network. The expectations and objectives have been combined into one table as many of the interviewees told their objectives have not changes after the joining. The objectives have been divided into two sub-categories: local objectives and business objectives.

Table 6 Key expectations and objectives for GRN

Theme	*Key expectations and objectives from GRN*
Local objectives	Becoming more visible in the area ***** - Support for recruiting new employees - Support for own marketing
	Getting to know other local businesses and what they offer ***
	Joining local collaboration **
	Influencing local decision-making *
Business objectives	Getting unexpected benefits for own business **
	Finding business partners **
	Understanding own field of business better **
	Finding new customers **
	Getting support for internationalization *

Some of the network members described research interviews as *"good reminders"* to plan their objectives for the network. These members understand the importance of objectives and believe they are more likely to receive benefits if they actively pursue them. Additionally, it could be beneficial to offer GRN members guidance in setting their objectives for the network and remind them to actively update them.

Strategic goals of GRN

Interestingly, over half of the interviewees said they do not know the strategic goals of GRN, or they were only able to guess the strategic goals to some extent. Some companies were able to mention few of the objectives and only one could describe the strategic goals with certainty. Even members that worked in significant roles, such as members of the steering group or communication group were not sure of the strategic objectives of the network.

> *"I cannot describe [the objectives]."*

> *"Maybe some green objectives."*

> *"I have been put in the box that I should know how this [network] operates. (…) Strategic goals, good question, I should know, I am part of the steering group. I have been part of the network from the beginning. The goal is to combine companies inside the network and get synergy benefits from it."*

However, most of the members feel they have an idea where the network is going, and most were sure their own strategic goals do not conflict with GRN strategy. Most network members identified the green objectives of the network as the name of the network already suggests green objectives. Companies also identified the objective of creating synergy in the local area. Furthermore, members realize the strategy is broad and it is enough if they share few similar objectives with the network strategy.

> *"When we talk about the name Greenreality, we also have a goal of saving energy and making carbon footprint smaller, so I think we have a common factor there."*

> *"I do not see any conflict [between the company's and networks strategy], the strategy is broad and touches a lot of areas that are not important for us, but another member of the network might benefit. This does not matter. Everybody improves the point that they want to be part of.*

The only mentioned conflict in network strategy and company's strategy was about networks role as promoting interests of the companies. The network consist of many different types of companies and a member was not sure how the network can promote every company's interest as the interest might be conflicting, for example between competitors. As one main goal of business networks is creating shared competitive advantage, it can be conflicting to belong in the same network with your own competitors (Håkansson & Snehota 1989). Previous academic literature has stated it is sometimes difficult to determine linkages in business networks as some relationships can be cooperative and collaborative at the same time (Gulati, Nohria & Zaheer 2000).

> *"Yes, promoting interests and as I said, there are many companies selling (…) products that compete with ours (…), so there is a lot of confliction for us."*

It can be concluded that network members are not fully aware of the network's current strategic goals. GRN could increase network members awareness. Especially the members of steering group should be aware of the goals of the network, if they intend to steer the network towards achieving its goals.

5.2 Collaboration in GRN

It is difficult for GRN members to determine which collaborations have started due to GRN, as they have had local relationships already before joining the network.

> *"It is hard to say if the [projects] have been Greenreality projects."*

The members that have been part of GRN project have mainly positive experiences from the collaboration. Members explain they have received benefits, such as getting direct contacts or developing their products.

> *"We have made basic research in our ventures, that has created real products that we sell and market. These [products] help keep our company profitable. So yes, collaboration has had results. It is not only research, it also includes concreteness at some point, hopefully."*

Some companies have not taken part in collaboration as their partners are not in the local area and they have other objectives for their membership than joining projects and collaborating with GRN members. Members found it difficult to describe unsuccessful GRN collaboration. Most of the respondents did not have experiences of unsuccessful projects. However, they explained what they regard as unsuccessful collaboration generally. One member described they do not always have resources to enter collaboration that could be beneficial for them. Another member sees project as unsuccessful if people start arguing and it prevents the collaboration from moving forward.

“I cannot name any collaboration that would have clearly failed.”

“Maybe I think either organizations or people in the organizations start to argue in unsuccessful collaboration. Then it is impossible to continue collaboration. But I do not have experience is this kind of events taking place.”

“[If there is an unsuccessful collaboration experience] maybe it is because of our own lack of resources or activity in some situation.”

One motive for collaboration was to receive innovative benefits. Results indicate GRN members do actively search for innovative partners in the network. Many of the members seek for projects that could help them either develop their current offerings or create new ones.

“[I am interested about] developing products and services, sparring, and changing experiences with [other members].”

“Of course, we think we might get new ideas for our activities and product development etc.”

One indicator for the importance of innovation is that most of the companies have done research collaboration with LUT-University. Companies are also eager to engage in student company collaboration with LUT students.

“We have traditionally had tight collaboration with LUT University. We have research ventures and Business Finland financed ventures. We also recruit LUT students and a lot of student work is done for us by LUT students.”

"We have had discussions with LUT about measuring our products qualities."

Throughout the interviews the members discussed reasons why they have taken part in network events or collaborations. Members also discussed the reasons why they have not actively taken part in collaborations with network members. These impacts have been collected to table 7. The positive and negative impacts to collaboration have been divided into two main levels: network level and organizational level.

Table 7 Collaboration in GRN

Level	Positively affects collaboration	Negatively effects collaboration
Network level	Positive experiences ****** - Has received help from the network - Previous successful collaboration - Feels valued in the network	Does not know all the companies involved in the network *
	It is possible to take part in the network activities in many ways ***	Other network members are competitors of the company *
		Has not received information about other members collaboration **
Organizational level	Clear goals for the network membership **	Does not see the collaboration as important **** - Because own tasks are not local - Is member of networks that give them more value - The network addresses subjects that are not interesting for the company
	Has a feeling other companies would benefit from their offerings *	The company's role in the network is unclear for the contact person *
	Is not part of other networks *	
Other		Covid-19 ******
		Lack of time ***

Positive experiences in GRN positively affect members intentions to join collaboration. Members have had positive experiences when they have received help from other members, they have had previous successful collaboration, and they feel they are valued by other GRN members. One member also emphasized it is important all members can join activities in many ways. Interviewees also described elements which have negatively impacted their intentions to join GRN collaborations. These include not knowing other members or their organizations offerings, having competitors in the network, and not receiving information about the ongoing collaborations.

On an organizational level companies that have set clear objectives for their membership find it easier to pursue collaborations that match their objectives. Members will also seek for collaboration if they feel they have something to offer for the other organizations. Barriers for collaboration on organization level include not seeing GRN collaboration important for their own organization. These members may have other objectives for the membership. Moreover, members might not see GRN collaboration important because they do not work on the local market, they are part of more important networks, and the network addresses subjects which are not important for them. Many members also think they do not have resources and time to actively search for opportunities. One interviewee also felt their own organizations role in the network was unclear, which made it difficult to engage in collaboration.

> *"When we have put more effort in [GRN], I have felt we are appreciated, which is a motivating factor."*

> *"Our activities are fully focused outside this area (…) This local activity does not bring much for us. It is a fact."*

> *"We are not in the center of this network"*

> *"Well, I don't have clear understanding about the members of the network."*

> *"If something does not directly affect what we do, I will pass it. I do not have time for everything."*

5.3 Communication in GRN

The analysis of communication in GRN is divided into internal communication and visibility. Internal communication describes the communication between the network members in both online and offline channels. The theme of external communication, regarded as visibility, emerged from the interviews as most of the interviewees had experiences and opinions about external communication as well.

Internal communication

The interviewees were asked about the current communication channels of GRN network. To understand which channels they use the most and if they are aware of all the channels. The results indicate network members see events and meetings as important communication channels. Nevertheless, during the least year covid-19 pandemic has prevented offline meetings and events. Some of the members miss normal gatherings but they understand the need of digital communication channels. Some members live in a different city or even on a different country and they see digital meetings as enablers for communication with other members.

> *"Taking part [in events] and networking with other people, which of course happens concretely between people may open new doors and opportunities. Taking part in certain events and things is central in making personal contacts and making personal contacts leads to company contacts and company collaboration."*

> *"Situation with covid-19 has restricted the activities, for example, activities where we all meet together. (…) Therefore, online communication in Teams is more important than ever before."*

Almost everyone mentioned digital channels: Teams, emails and some also added newsletters, webpages, social media channels and marketing-leaflets. When

discussing about the effectiveness of the current channels, most of the interviewees said they prefer Teams as communication channel. The benefit of Teams is that it is easy to return to the messages and discussions and it does not create spam messages. Some interviewees also emphasized that the use of Teams has become more popular after the covid-19 pandemic, because even the smaller companies have started to use it. Couple of the interviewees criticized emails, as they receive many emails, that get lost in their email folders and they sometimes delete messages before even reading them. However, none of the participants directed criticism towards the internal newsletter. Few members explained they have shared their organization's own news via the newsletter. There were also members who did not know the communication channels of GRN. None of the interviewees mentioned SOLVED channel which is used by the network. It can be concluded that GRN members value channels which enable to return to the messages, channels they already use in their work, and channels that enable two-way communication.

> *"[Communication happens] in Teams. That is a short and clear answer. Okay yeah, we receive some emails, but I see Teams as the primary channel."*

> *"I see Teams platform made for the network [good]. It is unfortunate, but I do not read emails, because I can find the same information from Teams. It is good that people use Teams actively and do not send that many emails. (…) I receive too much email pollution already, so I can't find important information from there."*

The results about the activity and amount of internal communication are conflicting. Some of the respondents felt like the number of internal messages is excessive, some felt like it is suitable, and some felt it is scarce. When taking the discussion further it seemed like some members get more messages and are involved in more communication channels. It is important for the network management to make sure all members have joined all channels and have access all internal communication. It also became clear some companies might not share that many messages with the rest of their staff and only one or two people have the access to the information. If these

people do not actively screen the messages to seek for opportunities, it is possible the company does not benefit from the internal communication.

> *"I think the current amount of internal messaging is on a good level, sometimes even excessive."*

> *"I think it is quiet overall. If I think about January-February, there was nothing. (…) But yeah, maybe the messages are in our CEO's email. I don't know but I think the [amount of communication] is scarce overall."*

Most network members think they are not active communicators in GRN. Many interviewees say they are *"listening members"* or *"following members".* However, some network members feel like they should be more active. Members that are part of the steering group think they are more active in communicating in the meetings than in digital channels. Most of the communicating in digital channels is sharing the messages to own organization. Interviewees also highlight that it is important to choose what kind of news and messages they want to focus on, as there is not enough time to discuss about all possible subjects. One of the members was not active for months because their company had technical issues with Teams. Previous literature also argues technical issues can prevent high-quality dialogue and engagement in digital channels (Berardo, Heikkila & Gerlak 2014). Members also realize they should be more active themselves to make sure other members know their company and its offerings, to enable networking.

> *"We are not that active. Truth is we have a lot to improve."*

> *"This actually feels quite bad, I belong in the communication [sub] group of the network and I regularly receive messages from teams (…) but I do not actively [send] messages there. So, it is a good point that you brought that up."*

> *"If there are [member] companies that we have not communicated with, we should make sure we communicate with them and ensure they know about us and our services."*

The results indicate the communication atmosphere in the steering group is good and one interviewee thinks the chairman has done good work with building the conversation culture in the meetings.

> *"The current chairman is very good. (…) He has been able to create a very good conversation culture to the steering group. It is actually really nice to go to these meetings."*

One member emphasized that internal communication on digital platforms should be developed towards more active two-way communication between the members of the network. Currently the communication is more "*passive informing"* instead of active two-way communication. Subgroups might help members to join the discussion as the conversation subgroups is more likely interesting for the members. Scholes and Cluttenbuck (1998), emphasized the importance of listening to different stakeholders' opinions instead of only sending outgoing messages.

> *"I would develop [internal communication] towards a direction other Teams-organizations have developed their communication. It should be understood that Teams is a "push and pull" [channel] that it based on users own activity. (…) [There] should be separate groups for separate subjects where people are interested about that subject. (…) [These groups] are open for everybody, so everybody can read the conversation and join if they want to. (…) GRN should lure people to this kind of approach, instead of making them passively receive messages"*

Closed project discussions were seen as a barrier for open communication between GRN members. Sometimes companies do not hear about ongoing GRN projects or they hear about them too late and they cannot join the project anymore. An idea of a project bank where all former and ongoing projects would be introduced came up in the interviews. This project bank would make the communications more open and enable multilateral communications between the members. However, as mentioned earlier, some members have competing members in the network. Companies might

not want to share information about their collaboration with their competitors, to conserve their competitive advantage.

> *"Most of the activities and project planning happens between old acquaintances. If we would get more openness to that, it would help the network to succeed even more."*

Previous research about Greenreality network suggested some network members are skeptical of digital communication tools (Kryzhanivska 2020). However, similar results were not found in this research. The only mentioned concerns were about people not meeting other members. The change in attitudes towards digital channels could be because of covid-19, as the members understand digital channels are currently the only possible channel for communication.

Visibility

External communication was also discussed in the interviews as many of the companies have an objective of increasing their local visibility and receiving marketing benefits from their membership in GRN. Members wish GRN would be well known in the area and all people in the area would be aware of the network. Members think communication should be planned more detailed and the messages should be targeted to different groups.

> *"On the part of external communication, I have for years thought it is important to achieve areal awareness, so that all local inhabitants would be aware of the network. When this is achieved it starts to generate positive outcomes (…) I think more effort should be put on this."*

> *"This kind of selective and targeted messaging [is important]. Communication has been mentioned in the network's strategy, but communications [subgroup] should think about mote detailed strategy. (…) This strategy would make the picture clearer."*

"I think external communication is something that could be improved a lot. I think this group is unknown for the inhabitants of the area. (…) What does this group even do. It must be difficult to reach large masses. (…) On the other hand, I do not know how necessary it is to message externally, what is the target group and what do we want."

5.4 Learning in GRN

The interviewees described they have learned important information about their technology or business, which has helped them to make business related decisions and develop their technologies and marketing.

"The big picture [of business life] has evolved. I understand the situation better. I feel like our viewpoint about our entire business and the direction where this world is going (…) has developed. And it makes it easier for me to make business related strategic decisions at the workplace."

"We have learned how we could bring our innovative capabilities to our public image (…) and use it to support our marketing and sales."

Members have also learned from research collaboration with LUT University. It is also supported by previous literature that in local institutions and business associations can increase the learning of organizations (Vanhaverbeke 2001). Interviewees described they have learned about local decision-making, other local members activities, and how the city runs its business.

"We have learned which companies have relationships with the city and LUT university and who are the people in the center [of the local business life] and who are listened to and whose opinions matter in the local decision-making and industry policy."

Table 8 below summarizes what GRN members have learned from the network and its other members. The learnings have been divided into three main categories: (1)

Business knowledge about own business field, (2) Technical information, and (3) Local knowledge. However, there were two interviewees, who said they haven't learned anything from taking part in the GRN.

Table 8 Learning in GRN

GRN learnings
Business knowledge about own field **** - Support for strategic decisions - Support for marketing own offerings
Technical information ** - Support for R&D - LUT University's research results
Local knowledge ***** - Local decision-making - Information about other members - How the city of Lappeenranta operates

The interviewees described they have learned from other GRN members when collaborating with them. However, one interviewer stated they do not collaborate to learn. One of the interviewees emphasized experiences in learning and argued people can learn from mistakes. The interviewees also suggest people learn from other people in other organizations not from the network itself. This is also supported by the theory as knowledge transfer and creation occur between organization members (Easterby-Smith, Lyles & Tsang 2008) .

> *"We have mainly learned from the collaborative activities."*

> *"You do not enter collaboration to learn."*

> *"Our company has not learned but individual people have learned through individual people. The network in itself is not a learning channel. It is communications between network members, which enables learning through other people."*

Previous research suggests collaboration partners may have different motivations and actions towards learning from each other. These actions can be for example, exploiting partner, excluding learning, exchanging with partner and exploring together with partner (Huxham & Hibbert 2004). Members might not find motivation for knowledge sharing if they feel other member has different motivations or the member is their competitor.

5.5 Trust in GRN

Things that have positively supported trust towards the Greenreality Network are that the management of the network understands the needs of different companies, the network is constantly evolving as new companies are joining it, none of the members are judged, and the companies have put competent people to engage in the network.

> "[The management] also understands our needs in a way that it does not tell us what to do and it lets us decide (…) what we want to do."

> *"I think we have a trust relationship. People do not judge each other's actions (…) on a personal level. Even though somebody would not come to a meeting or has not put that much effort, people do not judge and try to find solution which helps us to reach the best possible outcome."*

> *"People who take part in the meetings are competent people, who can make decisions in the organization. This makes me feel things we discuss and decide will move forward"*

For some people trust is more personal thing and they only form trust relationships with people instead of organizations. Interviewees described trust towards companies and people in the network evolves from knowing other members on a personal level, understanding the company's offerings, and having similar objectives with a company. One interviewee also described that every relationship starts with trust and other people need to break it to not have trust.

> *"Companies and communities are always formed of people. I cannot imagine any company that would not form from people. Everything comes down to the people. In some cases, you can lose trust towards an individual, but rarely towards the entire company. Maybe when the individual is the case of the company or leads it, then trust can mirror to the company profile as well."*

As the theory indicates, trust is built in cyclical process over time, where positive outcomes build on themselves (Capaldo 2007). Many of the interviewees also mentioned events or meeting the other members, this supports the results of communication shaping trust between different organizations (Sheng, Brown & Nicholson 2005).

> *"I've been going to these events and meetings for years. It helps when you start to know people around you (…) and you know what people and companies do. That is the way trust is built. I have not noticed anything [negative] that would eat the trust."*

The empirical findings also revealed barriers for forming trust in the case network. Trust towards the network can decrease if company has the negative feeling that other companies are favored by the management of the network. It is also difficult to trust network members that are direct competitors. Furthermore, one barrier for trust is continuous change of people in the network. This supports the previous findings that trust is built between people instead of organizations.

> *"I am not sure if it is intentional, or what is the reason behind [favoring other members]. (…) I am not naïve, it is a bit frustrating that I always question everything. But when we talk about money, markets, and marketing that is the way it goes."*

> *"People [shouldn't] change too often that the trust would suffer."*

For some interviewees, it was difficult to discuss about trust between different organizations in GRN. One member was not able to answer the question and one interviewee questioned if it is necessary to discuss about trust.

Table 9 below concludes the members experience about trust formation in GRN. The table presents things that have positively supported trust formation and negatively impacted the formation of trust in GRN. In the table 9 trust is divided into two types: trust towards the network and trust towards individual organizations and people. As the table shows, the answers about trust vary a lot as members mentioned different thing that support trust and negatively impact trust formation.

Table 9 Trust in GRN

Form of trust	*Positively supports trust formation*	*Negatively impacts trust*
Trust towards GRN	Network evolves **	Management favors members *
	Companies have competent people as network delegates *	Authority changes too often *
	Positive atmosphere without judgement *	Many competitors in the network *
	Members know each other *	
	Network management understands the members needs *	
Trust towards individual organizations and people	Knowing other members on a personal level *	Getting into an argument *
	Having same objectives with a member *	Direct competition *
	Trust towards other members is automatic, until something negative happens *	

In conclusion, to support positive trust building between the case network companies the management should be able to understand the needs of different companies, get new companies to join the network, make sure companies have competent people as the contact people and retain a positive atmosphere where nobody is judged. The network should also create events and meetings where people have the possibility to get to know each other and other's offerings. It also makes sense to continue activating sub-groups as these groups are more likely to share the same objectives within the group. Network management should avoid favoring other companies and making changes in the steering group too often. It is difficult for the management to affect the

changes in company representatives, but positive experiences could support that people enjoy the meetings and want to stay as contact people for longer. In addition, it is difficult to prevent competitors from joining the network, as it is open for everybody to join. These situations need to be handled carefully to avoid companies having the feeling their competitor is being favored.

Summary of the results

As it is clear from the results of this study companies join interorganizational networks with different goals and expectations. Members seek for collaboration, direct benefits for their business, networking, alliances, research projects, visibility, learning, and even surprising benefits they cannot describe. Thus, it is not unequivocal to answer the research question "*How can engagement in interorganizational business networks be developed?".* Developing engagement means different things for different members. To affect all members engagement, all aspects of engagement must be developed. As a result of this research a table of positive and negative effects to engagement was created. This table 10 is below. The management of the network can follow this table to see which actions they should take to develop engagement in GRN.

Table 10 Engagement in GRN

	Positive effects / what to increase	*Negative effects / what to decrease*
Collaboration, innovation, and value creation	- Visibility of GRN projects makes it easier for other members to join projects - Collaboration with LUT supports innovation	- Private project discussion - Organization is part of other networks too - The member's line of business is not in the center of GRN networks vision - Organization does not know other GRN members - Own role in the network is unclear for the contact person

Communication (Internal)	- Teams is a suitable channel for communication - Targeted messaging in subgroups instead of informing for the whole group - Members knowing each other - Active two-way communication in digital platforms - Positive discussion atmosphere in steering group	- Members are not sure they receive all important messages - Emails are not efficient communication channel - Members did not know all communication channels - Technical issues - Companies are not actively communicating in the network's digital platforms
Visibility (External communication)	- Local visibility supports member's recruitment and talent acquisition	- Local inhabitants do not currently know the network
Learning and knowledge sharing	- Communication supports learning - Members learn from collaboration	- All network members do not pursue to learn
Trust	- Knowing other members on a personal level - Understanding other companies' offerings - Having same objectives with other member companies - Positive atmosphere in the network - Having competent people as the network contact people	- Network contact people change too often - Network management favors other member companies - Network has competing members

Other	- The more member invests its resources to the network, more it gets benefits from the network	- Covid-19 - Members lack of time - Members do not remember to do GRN related tasks

A recurrent theme in the interviews was a sense among interviewees that the more member puts effort to the membership, the more benefits the member receive from the network. This was also clear when comparing active members answers to less active members. The companies that have actively participated in the networks events and collaboration found it easier to answer question about the benefits they have received and what they have learned. Companies that describe their role in the network as *"listeners"* or *"followers"* found it difficult to describe their experiences or what they have learned. Taken together, these results suggest that there is an association between activity and received benefits in GRN membership. If companies want to receive more benefits, they must also put effort in the membership.

> *"The network does not automatically bring things, business, contacts, and other, it requires your own activity. The main thing is that the more you put effort, the more you receive benefits from the network."*

> *"If I want support from this network, it depends on how much I am willing to put effort in [the network] myself."*

> *"If we haven't received benefits, is partly because we have not put effort in it."*

Another recurrent theme was the importance of setting goals for the network membership. Companies that have planned and discussed about clear goals feel it is possible to achieve them.

> *"I think the time for joining networks just to get in events is over. I think we are going to a direction where you need to plan your own objectives and*

starting points for the membership. […] You need to have something to give for the network but also to receive something from the network."

Network management could make these themes more visible for members that join the network. Members could be asked what they have to give for the network and what kind of benefits they want to receive and how.

During the data analysis a relationship between organization profile and findings was searched for. However, with a sampling of nine interviews no relationship between the profile of the organization and the effects to interorganizational engagement in GRN was found. The results indicate members own activity and the objectives for the network membership affect interorganizational engagement. For example, if a member organization is company that works in international markets, its objective might not be to engage in local collaboration. Nevertheless, this organization might have different objectives based on the company's own strategic goals. Furthermore, many of the members had not determined clear objectives for the network membership, which made it difficult to investigate if the companies have achieved their objectives.

GRN member's motivation towards the elements of engagement is presented in table 11 below. As table 11 below presents the only organization (company 5) that had issues with trusting the network in general and some of the members in the network is clearly less motivated to engage in GRN. This indicates the relationship between network engagement and trust is high. The issues in trust were caused by having competing companies as members of the network.

Table 11 GRN member's motivation for engagement elements

Organization	*The length of membership*	*Size of the company*	*Motivation for collaboration*	*Motivation for communication*	*Motivation for learning*	*Feeling of trust*
Company 1	Long	Large	High	High	Low	High
Company 2	Long	Small	Low	High	Low	High
Company 3	Long	Small	High	Low	High	High
Company 4	Long	Small	High	High	High	High
Company 5	Long	Small	Low	Low	Low	Low
Company 6	Short	Small	High	Low	High	High
Company 7	Short	Small	High	High	High	High
Educational institution	Long	Large	High	High	Low	High
City	Long	Large	High	Low	Low	High

The motivation for the table 11 has been identified based in the interview data. No companies were directly asked whether their motivation is high or low. Instead the identification has been made based on interviewees comments. To clarify and transparently describe the analysis examples sentences that describe high and low motivations are given in appendix 5.

DISCUSSION AND CONCLUSIONS

The objective of this study was to study interorganizational engagement. Furthermore, this study aims to find ways to develop interorganizational engagement in case network GRN. This chapter gives answers to the research questions by combining the empirical findings of the study with the theoretical background. First, theoretical contributions of the research are given, followed by managerial implications of the study. Finally, the limitations of this study are discussed and propositions for future research are given.

5.6 Theoretical contributions

The conclusions to the main research question are derived through answering the three sub-questions. Thus, the answers to sub-questions are covered first and the answer to the main research question is covered last.

What are the key elements of engagement in interorganizational business networks?

The key elements of interorganizational engagement in ION's were identified based on previous academic literature. The key elements of interorganizational engagement in ION context are collaboration (Faems, Looy & Debackere 2005; Alexiev, Volberda & Van den Bosch, Frans A. J. 2016; Le Pennec et al. 2018), communication (Mohr, Fisher & Nevin 1996), learning (Lane & Lubatkin 1998; Huxham & Hibbert 2008), and trust (Holm, Eriksson & Johanson 1999). Implementing research about interorganizational engagement turned out the be challenging as the subject has been studied from multiple perspectives and no broad definitions for network engagement were created earlier. Earlier academic literature tends to give insights to the reasons for joining collaborative networks and the ways to design collaborative processes, but little information is given about the factors that drive networks members to engage with one another (Berardo, Heikkila & Gerlak 2014).

The results of this study show, that organizations have different expectations, motivations, and objectives for interorganizational networks, hence it is important to understand all the elements of engagement. All of the elements have an affect each other (Berardo, Heikkila & Gerlak 2014) and it is sometimes difficult to distinguish them from each other. Previous academic literature supports the findings as there are numerous results of different interorganizational engagement elements effect on each other. To mention few examples: Distrust and inefficient communication negatively impact collaboration and learning positively impacts collaboration (Sharma & Kearins 2011). Communication functions as a mediator creating trust between organizations (Sheng, Brown & Nicholson 2005). Organizations can learn from collaboration with other organizations (Pekkarinen & Harmaaakorpi 2006; Huxham & Hibbert 2008). Trust supports interorganizational knowledge transfer (Li, L. 2005). Trust nurturing supports the nurturing of interorganizational collaborative processes (Vangen & Huxham 2003).

Furthermore, the empirical findings of this study indicate trust has significant effects on the other elements, as the GRN member that had lack of trust also had low motivation to the other elements of interorganizational engagement in GRN.

What are the barriers of engagement in interorganizational business networks?

Previous literature suggests the different elements of engagement affect each other and insufficiencies in the elements can cause barriers for other elements as well. For instance, learning often happens through collaboration, hence problems in collaboration can cause barriers for learning and distrust and ineffective communication may cause problems in interorganizational collaboration (Sharma & Kearins 2011). The empirical part of this study was used to determine further barriers on the elements of engagement in the context of Greenreality Network. Thus, the barriers for engagement will be discussed based on the elements of interorganizational engagement: collaboration, communication, learning and trust. Barriers for engagement are summarized in table 10 left column "*negative effects to interorganizational engagement*".

The findings of this research indicate there are barriers for interorganizational collaboration both on the organization level and on the network level. On the network level the barriers include not knowing the other members and their offerings, threat of competition from the members, and not having information about the possible ongoing collaborations. On the organization level barriers include lack of resources like time, unclear role in the network, and thinking the collaboration is not important for the company. The present findings are consistent with findings made by Sharma and Kearings (2011). In addition, Sharma and Kearings argue politics, power differences, tendency towards self-interest, resistance, and conflict, negative history, ineffective communication, and predominant adoption of tasks can be barriers for collaboration. The interviewees also felt the covid-19 pandemic has affected their possibilities to meet network members, which has possibly affected collaboration.

Communication is vital for collaboration (Hardy, Phillips & Lawrence 2003), learning, and trust forming (Kasper-Fuehrer & Ashkanasy 2001). The evidence from previous research shows lack of communication or inefficient communication is a barrier for interorganizational engagement. Furthermore, barriers for efficient communication between network members were identified on the empirical part of this study. The following barriers for interorganizational communication were identified: communication does not reach all members of the network, all communication channels are not effective, members do not know or use all the communication channels, technical issues with digital communication channels, and members do not actively communicate in digital channels.

There are similarities between the attitudes towards learning expressed in this study and those described by Huxham and Hibbert (2004) about the different motivations and actions towards learning. Some GRN members were motivated to learn about local business life, their line of business, and technical information whereas some stated they do not collaborate to learn. The analysis of the results indicates lack of motivation to learn is a barrier for learning. Some members were also a bit surprised by the question of learning which indicates companies might not have understood that network can be a channel for learning. This may indicate companies do not aim to learn, which is also a barrier for learning. Additionally, previous literature indicates interorganizational learning is highly related with the existence of connections between

organization relationships (Håkansson, Havila & Pedersen 1999). Which indicates the less organizations are connected the less they are likely to learn.

Previous academic literature suggests trust positively affects interorganizational collaboration (Arnaud & Mills 2012) and interorganizational relationships (Holm, Eriksson & Johanson 1999; Hsin-Mei Lin 2006). Therefore, it can be derived insufficient trust among network members is a barrier for interorganizational engagement. The empirical findings of the study indicate barriers for trust formation between GRN members are changes members in contact people, network management favors other member companies, and competing members. Previous academic research shows trust is created and shaped through direct communication (Sheng, Brown & Nicholson 2005; Thorgren & Wincent 2011). Thus, it can be derived inefficient communication is a barrier for trust formation as well.

What is the motivation behind engaging in a local interorganizational business network?

The motivation behind engagement in GRN network was analyzed based on the benefits members have received and want to receive from the network. The empirical findings of the research indicate companies join the network with different motivations and expectations (Sharma & Kearins 2011). The motivations to engage in a local interorganizational business network were divided into two main categories: local motivations and business motivations. The local motivations to engage in a local ION are getting to know local businesses, becoming more known in the local business life, influencing local decision-making, and becoming more visible to the people living in the area.

The business-related motivations to engage in a local ION are getting unexpected benefits for own business, finding business partners, understanding own business field better, getting support for internationalization, and finding new customers.

Previous academic literature has showed supporting results as organizations might enter interorganizational collaboration for multiple reasons, such as areal sustainability (Sharma & Kearins 2011), competitive advantage from new innovations (Alexiev,

Volberda & Van den Bosch, Frans A. J. 2016), governmental projects (Gray 1985; Klijn & Koppenjan 2000), environmental change (Hsin-Mei Lin 2006) and benefits for internationalization (Vasilchenko & Morrish 2011).

How can engagement in interorganizational business networks be developed?

The results of this study suggest that companies enter interorganizational business networks with different expectations, objectives, and needs. Thus, it is not unequivocal to develop the engagement in ION's. To truly develop the engagement of GRN, must all members be considered. To answer the research question, all elements of engagement will be discussed individually and finally summarized at the end of the chapter.

The empirical findings of the research indicate collaboration can be developed in Greenreality Network. The results of the study showed transparency is needed in the communication of GRN projects, as it was difficult to determine which projects have been GRN collaboration and some members felt they have been left out of collaboration communication. Network could develop the visibility of GRN projects and transparently communicate about new possible projects with other members. When members know what kind of collaboration has been done, it might make it easier to implement new collaboration and ask other members to join. However, most problems in collaboration are led by the nature of it; organizations can be bias and pursue their own interests and lack commitment and resources (Sharma & Kearins 2011).

This study has shown that development can be especially made in the communication of the network. GRN members have alternating experiences of the current internal communications and some of the communication do not reach all members. Communication has been transferred mostly to digital channels because of covid-19. Some members see this as a positive change but some long for face-to-face meetings. Interviewees did not identify all the communication channels or felt some or not necessary, thus the importance of having multiple channels should be considered. The interviewees saw teams as an effective communication channel. However, a recurrent theme in the interviews was a sense among interviewees that their organization is not actively communicating in the digital channels. One interviewee

underlined the need to develop active two-way communication between the network members. Another interviewee highlighted the importance of activating discussion in the subgroups of the network. A common view among the members is that events support people getting to know each other and engaging within the network. The findings also indicate positive atmosphere can support internal communication.

The importance of network visibility emerged from the interviews. Network members see local visibility as beneficial for them and the inhabitants of the area should know the network. Local visibility supports companies' recruitment activities and companies expect this kind of benefits from the network membership. Local visibility could be developed through increasing resources in the network marketing department and planning marketing activities together with the network members.

The results of this study support previous academic literature and suggest trust is built through positive experiences in a cyclical process (Vangen & Huxham 2003, Capaldo 2007). The results show trust is positively affected by knowing other members on a personal level, understanding other companies' offerings, having same objectives with other members companies, and having positive atmosphere within the network. Developing trust supports the other elements of engagement as well, because interorganizational trust is associated with positive interfirm collaboration (Arnaud & Mills 2012), knowledge transfer (Li, L. 2005), and innovation (Capaldo 2007).

The results of this study indicate GRN members learn through communicating and collaborating with other members. Members have learned about local business life, their own field of business, and technology from the network. Nevertheless, few members felt it was difficult to describe learning or they felt they have not learned through GRN. The results indicate learning can be developed through developing communication and collaboration among the members. Moreover, it would be beneficial to increase the visibility of learning and show new members it is possible to learn through network and it is something that should be pursued.

One of the more significant findings to emerge from this study is that companies that put more effort in GRN and have planned their objectives for the network membership receive more benefits. This finding underlines interorganizational network

engagement's mechanism as an enabler for benefits (Berardo, Heikkila & Gerlak 2014). Previous academic literature has shown that organizations placement in the network affects how beneficial the network is for the organization and organizations that have more central place enjoy higher returns as they have better access to information and opportunities (Gulati, Nohria & Zaheer 2000; Van Leeuwen et al. 2018). The interviewees that had had either previously or currently been part of the networks steering group were able to mention many benefits and positive experiences from the network. This empirical finding supports central role's impact on receiving benefits from the network.

GRN is a deliberate intentional network (Ritter, Wilkinson & Johnston 2004) which is managed by the City of Lappeenranta. The city of Lappeenranta is suitable for the role as Klijn and Koppenjan (2000) see governmental actors as outstanding candidates for network managers role. Even though the early literature about interorganizational engagement argues networks cannot be managed (Jarillo 1988), never literature shown networks can be managed to some extent (Ritter, Wilkinson & Johnston 2004; Dagnino, Levanti & Mocciaro Li Destri 2016). The results of this study indicate the management of GRN can support the development of interorganizational engagement within the network. However, the individual member organizations and the stressing group of the network also have role in the development. Thus, managerial implications will be given to both the management of the network and the management of the individual organizations in the following chapter 6.1.

In summary, the results show that the elements of engagement have an impact on each other and by developing one of them the others are developed as well. Trust supports positive collaboration, learning, and communication. Organizations learn through communication and collaboration. Communication and collaboration also support the creation of trust. The results are in line with the previous academic literature. This work contributes to existing knowledge of interorganizational engagement by providing a holistic interpretation of engagement and its elements. Holistic interpretation was necessary as the previous literature about interorganizational engagement is scattered and often shows only some relationships between the elements of engagement. This holistic view provides evidence that all elements of engagement are connected and have an effect on each other.

5.7 Managerial implications

Based on the theoretical and empirical findings there are two viewpoints that can be considered when giving managerial implications from the results of this study. From an individual organization's viewpoint, managerial implications can be given to support the organizations strategic decisions in the network. Organizations should carefully evaluate if the network is worth using their resources in. When the network is beneficial for the organization, they should clarify their strategy and plan what kind of outcomes they wish to receive from the network membership. The results of this study indicate organizations that put more effort in their network membership receive more benefits, such as stronger relationships, positive collaboration experiences and information about their business field. Moreover, managers of the member organizations could familiarize themselves with the elements of interorganizational network engagement and evaluate if there is something worth pursuing, they have not yet thought of, for instance, learning from other network members. Previous academic research and the empirical findings of this research indicates companies that have a central role in network receive more benefits from the network (Gulati, Nohria & Zaheer 2000; Van Leeuwen et al. 2018). Thus, companies should seek for more central roles when they want to increase the benefits from the network.

From network management's point of view, managerial implications can be given to develop the management of the network. Even though the evidence about the manageability of networks is conflicting (Jarillo 1988; Ritter, Wilkinson & Johnston 2004; Dagnino, Levanti & Mocciaro Li Destri 2016), the case network GRN is managed by the city of Lappeenranta and a steering group is formed to lead the network. One objective of this study was to give managerial implications for the network's management.

One important aspect of GRN is the collaboration between the network members. The empirical findings of this study show it is difficult for members to determine if the collaboration has started due to GRN or because of other reasons. Furthermore, companies sometimes have difficulties joining collaboration because the collaborative projects are discussed privately. One interviewee offered a possible solution for these problems: a joined project bank would showcase the previous and current GRN

projects and support collaborative actions. Project bank would also bring the green achievements of the network more visible and help companies realize the benefits of the network. In addition, all members would know what collaborations are active in the network and they could seek for possibilities to join them.

The findings of his study highlight the importance of communication. Network management should assess the functionality of the current communication of the network. Network members identified multiple issues in the current internal communication. First, all communication does not reach every member organization. Second, network members do not use all communication channels. Third, current communication on digital platforms is one-way informing by the network management. Fourth, network members do not communicate actively in the network. Finally, some important discussions are communicated privately. Network management should consider which communication channels they want to use in the future. There were some channels none of the interviewees mentioned as they do not remember they exist. The communication of the network should be developed towards a more active two-way communication instead of one-way informing. This can be done by dividing the members into smaller subgroups where members can direct their messages to companies that are interested about the subject. Additionally, transparency of the communication should be increased to enable all members receive information.

Another important practical implication is that network management could bring learning more visible in the network. Some interviewees argued they haven't learned anything from the network, whereas other felt the network had taught a lot about local business life, their own field of business, and technology. It seems some network members have not realized they can learn important things through the network. Therefore, it is important to increase the visibility of network learning in GRN.

The results of this study indicate trust between network members supports interorganizational network engagement strongly. Network management should create a positive atmosphere and events for trust building among the members. The study shows members build trust between each other when they know other members on a personal level and understand companies' offerings. Management should avoid situations that prevent trust building, such as favoring other members or having

multiple competitors in the network. One interesting finding of the study is that some network members can build trust towards the entire network and some build trust on a more personal level with other member organizations or their representatives. Previous literature indicates preexisting trust among organizations increases the probability of less formal and less expensive governance in the context of interorganizational networks (Gulati & Nickerson 2008). Thus, management should take trust building seriously.

One concerning finding of the research is that most of the member companies are not aware of the current strategy of the network. Even the previous or current members of the steering group were not fully aware of it. Shared objectives can motivate the companies to engage more in the network activities. In addition, as discussed in the managerial implications for individual organizations, the result indicates organizations that have objectives and put effort in the network membership receive more benefits from the membership. Management of the network should support new member organizations in setting objectives when they join GRN.

Taken together, these findings give valuable managerial implications for the case network Greenreality Network. However, other network managers and members of other networks can benefit from the implications of this research to develop their activities. Some findings might be limited to GRN network but deepening knowledge about network engagement may be valuable for planning activities on other networks also.

5.8 Limitations and suggestions for further research

Finally, a number of important limitations need to be considered. The main objective of this study was to give broad definition to the concept of interorganizational engagement. To do this it was necessary to bridge together large concepts that have been studied from multiple different perspectives. In this study elements of interorganizational engagement were identified and a framework that combines the elements in network context was created. It is evident these elements affect each other, but the relationships weren’t examined on a deeper level. Further research about the effects of these elements on a network context is needed. Research should

concentrate on how these elements affect each other and the entire network. Which is a demanding task due to the continuously evolving nature of networks and interorganizational engagement.

This research was carried out as qualitative single case study, which also causes some limitations as the key issue of case studies is that the use of empirical data can lead to overly complex generalizations of theory or in too narrow and idiosyncratic theories (Eisenhardt 1989). The perspective of this study was narrowed to one case network and the number of interviews was nine. Networks are embedded in different geographical, social, political, technological and market situations, and structures, which means every network in context specific and unique (Halinen & Törnroos 2005). Hence, the results of this case study may not apply on different network settings. Thus, the results of this study are limited to the case network GRN and it is recommended that further investigation about the generalization of these results is needed. Moreover, it would the interesting to assess the effect of managerial implications and assess if the engagement of GRN network will develop with the help of this study. Longitudinal data could help assess the development of engagement in GRN.

One main finding of this study was that engagement can be an enabler for the benefits of interorganizational networks. Further research needs to examine more closely the links between organizations network activity and the benefits the organizations receives. However, as stated in the theoretical part of this study it is extremely difficult to measure the monetary value for network membership (Barringer & Harrison 2000).

REFERENCES

Achrol, R.S. (1996) Changes in the theory of interorganizational relations in marketing: Toward a network paradigm. *Journal of the Academy of Marketing Science.* 25 (1), 56.

Aggarval, V.A., Siggekow, N. & Sing, H. (2011) Governing Collaborative Activity: Interdependence and the Impact of Coordination and Exploration. *Strategic Management Journal.* 32 (7), 705-730.

Ahuja, G., Soda, G. & Zaheer, A. (2012) The Genesis and Dynamics of Organizational Networks. *Organization science (Providence, R.I.).* 23 (2), 434-448.

Alexiev, A.S., Volberda, H.W. & Van den Bosch, Frans A. J. (2016) Interorganizational collaboration and firm innovativeness: Unpacking the role of the organizational environment. *Journal of Business Research.* 69 (2), 974-984.

Andersson, A. (2016) Communication barriers in an interorganizational ERP-project. *International journal of managing projects in business.* 9 (1), 214-233.

Andersson, J. (1995) Relationships in business markets: exchange episodes, value creation, and their empirical assessment. *Journal of the Academy of Marketing Science.* 23 (4), 346.

Arnaud, N. & Mills, C.E. (2012) Understanding Interorganizational Agency: A Communication Perspective. *Group & organization management.* 37 (4), 452-485.

Assael, H. (1969) Constructive Role of Interorganizational Conflict. *Administrative Science Quarterly.* 14 (4), 573-582.

Barringer, B.R. & Harrison, J.S. (2000) Walking a Tightrope: Creating Value Through Interorganizational Relationships. *Journal of management.* 26 (3), 367-403.

Bazeley, P. & Jackson, K. (2013) Qualitative data analysis with NVivo.

Berardo, R., Heikkila, T. & Gerlak, A.K. (2014) Interorganizational Engagement in Collaborative Environmental Management: Evidence from the South Florida

Ecosystem Restoration Task Force. *Journal of public administration research and theory.* 24 (3), 697-719.

Besser, T., Miller, N. & Perkins, R. (2006) For the greater good: business networks and business social responsibility to communities. *Entrepreneurship and regional development.* 18 (4), 321.

Boje, D.M. & Whetten, D.A. (1981) Effects of Organizational Strategies and Contextual Constraints on Centrality and Attributions of Influence in Interorganizational Networks. *Administrative Science Quarterly.* 26 (3), 378-395.

Bonabeau, E. (2009) Decisions 2.0 the power of collective intelligence. *MIT Sloan management review.* 50 (2), 45.

Borgatti, S.P. & Halgin, D.S. (2011) On Network Theory. *Organization Science.* 22 (5), 1168-1181.

Cambridge Dictionary. (2020) interorganizational. [www document]. [Accessed: Mar 3, 2021]. Available:https://dictionary.cambridge.org/dictionary/english/interorganizational.

Capaldo, A. (2007) Network Structure and Innovation: The Leveraging of a Dual Network as a Distinctive Relational Capability. *Strategic Management Journal.* 28 (6), 585-608.

Christensen, C.M. (2013) The innovator's dilemma: when new technologies cause great firms to fail. Harvard Business Review Press.

Creswell, J.W. (2013) Qualitative inquiry & research design: choosing among five approaches. 3 ed. Thousand Oaks, CA, SAGE Publications.

Dagnino, G.B., Levanti, G. & Mocciaro Li Destri, A. (2016) Structural Dynamics and Intentional Governance in Strategic Interorganizational Network Evolution: A Multilevel Approach. *Organization Studies.* 37 (3), 349-373.

Dhanaraj, C. & Parkhe, A. (2006) Orchestrating Innovation Networks. *The Academy of Management review.* 31 (3), 659-669.

Dong, J.Q., McCarthy, K.J. & Schoenmakers, W. (2017) How Central Is Too Central? Organizing Interorganizational Collaboration Networks for Breakthrough Innovation. *The Journal of product innovation management.* 34 (4), 526-542.

Dubois, A. & Gadde, L. (2002) Systematic combining: an abductive approach to case research. *Journal of business research.* 55 (7), 553-560.

Easterby-Smith, M., Lyles, M.A. & Tsang, E.W.K. (2008) Inter-Organizational Knowledge Transfer: Current Themes and Future Prospects. *Journal of management studies.* 45 (4), 677-690.

Eisenhardt, K.M. (1989) Building theories from case study research. *Academy of management review.* 14 (4), 532-550.

Faems, D., Looy, B.V. & Debackere, K. (2005) Interorganizational Collaboration and Innovation: Toward a Portfolio Approach. *Journal of Product Innovation Management.* 22 (3), 238-250.

Gillham, B. (2005) Research interviewing: the range of techniques. Maidenhead, Open University Press.

Gioia, D.A., Corley, K.G. & Hamilton, A.L. (2013) Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology. *Organizational Research Methods.* 16 (1), 15-31.

Granovetter, M.S. (1973) The Strength of Weak Ties. *The American journal of sociology.* 78 (6), 1360-1380.

Gray, B. (1985) Conditions Facilitating Interorganizational Collaboration. *Human Relations.* 38 (10), 911-936.

Greenreality. (2016) What is Greenreality Network? [www document]. [Accessed: Feb 28, 2021]. Available:https://www.greenreality.fi/en/network/what-greenreality-network.

Gregg, D. (2010) Designing for collective intelligence. *Communications of the ACM.* 53 (4), 134-138.

Griffith, D.A. & Harvey, M.G. (2001) Executive Insights: An Intercultural Communication Model for Use in Global Interorganizational Networks. *Journal of international marketing (East Lansing, Mich.).* 9 (3), 87-103.

Gulati, R. & Gargiulo, M. (1999) Where do interorganizational networks come from? *The American journal of sociology.* 104 (5), 1439-1493.

Gulati, R. & Nickerson, J.A. (2008) Interorganizational Trust, Governance Choice, and Exchange Performance. *Organization science (Providence, R.I.).* 19 (5), 688-708.

Gulati, R., Nohria, N. & Zaheer, A. (2000) Strategic Networks. *Strategic Management Journal.* 21 (3), 203-215.

Håkanssom, H.& Snehota, I. (1995) Developing Relationships in Business Networks . London, Routledge.

Håkansson, H. & Ford, D. (2002) How should companies interact in business networks? *Journal of business research.* 55 (2), 133-139.

Håkansson, H., Havila, V. & Pedersen, A. (1999) Learning in Networks. *Industrial marketing management.* 28 (5), 443-452.

Håkansson, H.& Johanson, J. (2001) Business network learning. 1 ed. New York, Pergamon Press.

Håkansson, H. & Snehota, I. (1989) No business is an island: The network concept of business strategy. *Scandinavian Journal of Management.* 5 (3), 187-200.

Halinen, A. & Törnroos, J. (2005) Using case methods in the study of contemporary business networks. *Journal of business research.* 58 (9), 1285.

Hardy, C. & Phillips, N. (1998) Strategies of Engagement: Lessons from the Critical Examination of Collaboration and Conflict in an Interorganizational Domain. *Organization science (Providence, R.I.).* 9 (2), 217-230.

Hardy, C., Phillips, N. & Lawrence, T.B. (2003) Resources, Knowledge and Influence: The Organizational Effects of Interorganizational Collaboration. *Journal of management studies.* 40 (2), 321-347.

Hayhow, R. & Stewart, T. (2006) Introduction to qualitative research and its application to stuttering. *International journal of language & communication disorders; Int J Lang Commun Disord.* 41 (5), 475-493.

Hirsjärvi, S.& Hurme, H. (2001) Tutkimushaastattelu: teemahaastattelun teoria ja käytäntö. Helsinki, Yliopistopaino.

Hirsjärvi, S., Remes, P., Sajavaara, P.& Sinivuori, E. (2009) Tutki ja kirjoita. 15 ed. Helsinki, Tammi.

Holm, D.B., Eriksson, K. & Johanson, J. (1999) Creating value through mutual commitment to business network relationships. *Strategic Management Journal.* 20 (5), 467-486.

Hossain, M. & Lassen, A.H. (2017) How do digital platforms for ideas, technologies and knoweldge transfer act as enablers for digital transformation? *Technology innovation management review.* 7 (9), 55.

Hsin-Mei Lin. (2006) Interorganizational Collaboration, Social Embeddedness, and Value Creation: A Theoretical Analysis. *International journal of management.* 23 (3), 548.

Huxham, C. & Hibbert, P. (2008) Manifested Attitudes: Intricacies of Inter-Partner Learning in Collaboration. *Journal of management studies.* 45 (3), 502-529.

Huxham, C. & Hibbert, P. (2004) Collaborating to Know?: Interorganizational Engagement and Learning. *Advanced Institute of Management Research.* 1-36.

Huxham, C. & Vangen, S. (2000) Leadership in the Shaping and Implementation of Collaboration Agendas: How Things Happen in a (Not Quite) Joined-up World. *Academy of Management journal.* 43 (6), 1159-1175.

Jaakkola, E. & Hakanen, T. (2013) Value co-creation in solution networks. *Industrial marketing management.* 42 (1), 47-58.

Jarillo, C. (1988) On Strategic Networks. *Strategic Management Journal.* 9 (1), 31-41.

Johannisson, B. & Nilsson, A. (1989) Community entrepreneurs: networking for local development. *Entrepreneurship & Regional Development.* 1 (1), 3-19.

Johannisson, B., Ramírez-Pasillas, M. & Karlsson, G. (2002) The institutional embeddedness of local inter-firm networks: a leverage for business creation. *Entrepreneurship and regional development.* 14 (4), 297-315.

Johnson, D. (2001) What is innovation and entrepreneurship? Lessons for larger organisations. *Industrial and commercial training.* 33 (4), 135-140.

Kasouf, C.J., Celuch, K.G. & Bantham, J.H. (2006) An examination of communication behaviors as mediators in individual-level interorganizational exchanges. *Psychology & marketing.* 23 (1), 35-56.

Kasper-Fuehrer, E. & Ashkanasy, N.M. (2001) Communicating trustworthiness and building trust in interorganizational virtual organizations. *Journal of management.* 27 (3), 235-254.

Kattainen, J., 2016. *Heterarkkisen verkostoyhteistyön johtamistarpeet verkoston muotoutumisvaiheessa*, Lappeenranta University of Technology.

Kim, T., Oh, H. & Swaminathan, A. (2006) Framing Interorganizational Network Change: A Network Inertia Perspective. *Academy of Management Review.* 31 (3), 704-720.

Klijn, E.H. & Koppenjan, J.F.M. (2000) Public Management and Policy Networks: Foundations of a network approach to governance. *Public management (London, England).* 2 (2), 135-158.

Knight, L. (2002) Network Learning: Exploring Learning by Interorganizational Networks. *Human relations (New York).* 55 (4), 427-454.

Koskinen, I., Peltonen, T.& Alasuutari, P. (2005) Laadulliset menetelmät kauppatieteissä. Tampere, Vastapaino.

Kryzhanivska, K., 2020. *Understanding the role of teams and networks in the development of ecosystems*, Technical University of Braunschweig.

Lane, P.J. & Lubatkin, M. (1998) Relative absorptive capacity and interorganizational learning. *Strategic Management Journal.* 19 (5), 461-477.

Le Pennec, M., Le Pennec, M., Raufflet, E. & Raufflet, E. (2018) Value Creation in Inter-Organizational Collaboration: An Empirical Study. *Journal of Business Ethics.* 148 (4), 817-834.

Lee, N.& Ling, I. (2008) Doing Business Research: A Guide to Theory and Practice. London, SAGE Publications Ltd.

Li, A., Zhou, L., Su, Q., Cornelius, S.P., Liu, Y., Wang, L. & Levin, S.A. (2020) Evolution of cooperation on temporal networks. *Nature communications; Nat Commun.* 11 (1), 2259.

Li, L. (2005) The effects of trust and shared vision on inward knowledge transfer in subsidiaries' intra- and inter-organizational relationships. *International business review.* 14 (1), 77-95.

Madhok, A. & Tallman, S. (1998) Resources, transactions and rents: Managing value through interfirm collaborative relationships. *Organization science /.* 9 (3), 326.

Matinheikki, J., Artto, K., Peltokorpi, A. & Rajala, R. (2016) Managing inter-organizational networks for value creation in the front-end of projects. *International Journal of Project Management.* 34 (7), 1226.

Mattsson, L. (1997) "Relationship marketing" and the "markets-as-networks approach"-a comparative analysis of two evolving streams of research. *Journal of marketing management.* 13 (5), 447-461.

Microsoft. (2020) Videoneuvottelu, kokoukset, puhelut | Microsoft Teams. [www document]. [Accessed: Apr 27, 2021]. Available:https://www.microsoft.com/fi-fi/microsoft-teams/group-chat-software.

Mohr, J.J., Fisher, R.J. & Nevin, J.R. (1996) Collaborative Communication in Interfirm Relationships: Moderating Effects of Integration and Control. *Journal of Marketing.* 60 (3), 103-115.

Möller, K. & Halinen, A. (1999) Business Relationships and Networks: Managerial Challenge of Network Era. *Industrial marketing management.* 28 (5), 413-427.

Möller, K. & Rajala, A. (2007) Rise of strategic nets — New modes of value creation. *Industrial marketing management.* 36 (7), 895-908.

Möller, K., Rajala, A. & Svahn, S. (2005) Strategic business nets—their type and management. *Journal of business research.* 58 (9), 1274-1284.

Monge, P.R., Fulk, J., Kalman, M.E., Flanagin, A.J., Parnassa, C. & Rumsey, S. (1998) Production of Collective Action in Alliance-Based Interorganizational Communication and Information Systems. *Organization science (Providence, R.I.).* 9 (3), 411-433.

Müller-Seitz, G. (2012) Leadership in Interorganizational Networks: A Literature Review and Suggestions for Future Research. *International journal of management reviews : IJMR.* 14 (4), 428-443.

Pallotti, F., Lomi, A. & Mascia, D. (2013) From network ties to network structures: Exponential Random Graph Models of interorganizational relations. *Quality & quantity.* 47 (3), 1665.

Paulraj, A., Lado, A.A. & Chen, I.J. (2008) Inter-organizational communication as a relational competency: Antecedents and performance outcomes in collaborative buyer–supplier relationships. *Journal of Operations Management.* 26 (1), 45-64.

Pekkarinen, S. & Harmaaakorpi, V. (2006) Building regional innovation networks: The definition of an age business core process in a regional innovation system. *Regional studies.* 40 (4), 401.

Peltoniemi, M. & Vuori, E. (2008) Business ecosystem as the new approach to complex
adaptive business environments. *Proceedings of EBusiness Research Forum.* 1-15.

Pinho, N., Beirão, G. & Patrício, L. (2014) Understanding value co-creation in complex services with many actors. *Journal of service management.* 25 (4), 470.

Porter, M. (1989) How Competitive Forces Shape Strategy. *Readings in Strategic Management.* London. Palgrave. 133-134.

Provan, K., Fish, A. & Sydow, J. (2007) Interorganizational Networks at the Network Level: A Review of the Empirical Literature on Whole Networks. *Biological Psychology - BIOL PSYCHOL.* 33 479-516.

Reagans, R. & McEvily, B. (2003) Network Structure and Knowledge Transfer: The Effects of Cohesion and Range. *Administrative Science Quarterly.* 48 (2), 240-267.

Ritter, T. (1999) The Networking Company: Antecedents for Coping with Relationships and Networks Effectively. *Industrial marketing management.* 28 (5), 467-479.

Ritter, T. & Gemünden, H.G. (2003) Interorganizational relationships and networks: An overview. *Journal of business research.* 56 (9), 691-697.

Ritter, T., Wilkinson, I.F. & Johnston, W.J. (2004) Managing in complex business networks. *Industrial marketing management.* 33 (3), 175-183.

Robins, C. & Eisen, K. (2017) Strategies for the Effective Use of NVivo in a Large-Scale Study: Qualitative Analysis and the Repeal of Don't Ask, Don't Tell. *Qualitative inquiry.* 23 (10), 768-778.

Ryynänen, H., (2013) From network pictures to network insight in solution business – the role of internal communication. Lappeenranta University of Technology.

Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J. & Bartlam, B. (2018) Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & quantity; Qual Quant.* 52 (4), 1893-1907.

Saunders, M., Lewis, P.& Thornhill, A. (2016) Research methods for business students. Harlow, Essex, Pearson Education.

Scholes, E. & Clutterbuck, D. (1998) Communication with stakeholders: An integrated approach. *Long range planning.* 31 (2), 227-238.

Scott, J.E. (2000) Facilitating Interorganizational Learning with Information Technology. *Journal of Management Information Systems.* 17 (2), 81-113.

Sedera, D., Lokuge, S., Grover, V., Sarker, S. & Sarker, S. (2016) Innovating with enterprise systems and digital platforms: A contingent resource-based theory view. *Information & management.* 53 (3), 366-379.

Shank, G.D. (2006) Qualitative research : a personal skills approach. 2 ed. Upper Saddle River (NJ), Pearson Merrill Prentice Hall.

Sharma, A. & Kearins, K. (2011) Interorganizational Collaboration for Regional Sustainability: What Happens When Organizational Representatives Come Together? *The Journal of applied behavioral science.* 47 (2), 168-203.

Sharp, J. (2001) Locating the community field: A study of interorganizational network structure and capacity for community action. *Rural sociology.* 66 (3), 403.

Sheng, S., Brown, J.R. & Nicholson, C.Y. (2005) The Mediating Role of Communication in Interorganizational Channels. *Journal of marketing channels.* 13 (2), 51-80.

Shumate, M., Atouba, Y., Cooper, K.R. & Pilny, A. (2016) Interorganizational Communication. *The International Encyclopedia of Organizational Communication.* 1-24.

Shumate, M. & Contractor, N. (2013) Emergence of multidimensional social networks. *The SAGE handbook of organizational communication.* 449-474.

Solved. (2020) Solved - On-demand experts for sustainability. [www document]. [Accessed: Apr 19, 2021]. Available:https://www.solved.fi/.

Span, K., Luijkx, K., Schols, J. & Schalk, R. (2012) The relationship between governance roles and performance in local public interorganizational networks: A conceptual analysis. *American review of public administration.* 42 (2), 186.

Sydow, J.ö & Müller-Seitz, G. (2020) Open innovation at the interorganizational network level – Stretching practices to face technological discontinuities in the semiconductor industry. *Technological forecasting & social change.* 155 119398.

Thorgren, S. & Wincent, J. (2011) Interorganizational Trust: Origins, Dysfunctions and Regulation of Rigidities: Interorganizational Trust. *British Journal of Management.* 22 (1), 21-41.

Thorgren, S., Wincent, J. & Örtqvist, D. (2009) Designing interorganizational networks for innovation: An empirical examination of network configuration, formation and governance. *Journal of engineering and technology management JET-M.* 26 (3), 148.

Tuomi, J.& Sarajärvi, A. (2018) Laadullinen tutkimus ja sisällönanalyysi. Helsinki, Kustannusosakeyhtiö Tammi.

Van de Ven, Andrew H & Walker, G. (1984) The Dynamics of Interorganizational Coordination. *Administrative Science Quarterly; Adm Sci Q.* 29 (4), 598-621.

Van Leeuwen, B., Ramalingam, A., Rojo Arjona, D. & Schram, A. (2018) Centrality and cooperation in networks. *Experimental economics : a journal of the Economic Science Association.* 22 (1), 178-196.

Vangen, S. & Huxham, C. (2003) Nurturing Collaborative Relations: Building Trust in Interorganizational Collaboration. *The Journal of applied behavioral science.* 39 (1), 5-31.

Vanhaverbeke, W. (2001) Realizing new regional core competencies: establishing a customer-oriented SME network. *Entrepreneurship and regional development.* 13 (2), 97-116.

Vasilchenko, E. & Morrish, S. (2011) The Role of Entrepreneurial Networks in the Exploration and Exploitation of Internationalization Opportunities by Information and

Communication Technology Firms. *Journal of international marketing (East Lansing, Mich.).* 19 (4), 88-105.

Vlaar, P.W.L., Van den Bosch, Frans A. J & Volberda, H.W. (2006) Coping with Problems of Understanding in Interorganizational Relationships: Using Formalization as a Means to Make Sense. *Organization Studies.* 27 (11), 1617-1638.

Webster, J. & Watson, R.T. (2002) Analyzing the Past to Prepare for the Future: Writing a Literature Review. *MIS quarterly.* 26 (2), xiii-xxiii.

Wheelwright, S.C.& Clark, K.B. (1992) Revolutionizing product development: quantum leaps in speed, efficiency, and quality. Simon and Schuster.

Young, A.M. & Hinesly, M.D. (2014) Social Media Use to Enhance Internal Communication: Course Design for Business Students. *Business and professional communication quarterly.* 77 (4), 426-439.

Zaheer, A., McEvily, B. & Perrone, V. (1998) Does Trust Matter? Exploring the Effects of Interorganizational and Interpersonal Trust on Performance. *Organization science (Providence, R.I.).* 9 (2), 141-159.

Zainal, Z. (2007) Case study as a research method. *Jurnal kemanusiaan.* 5 (1).

Zhang, Y. & Elsner, W. (2020) Social leverage, a core mechanism of cooperation. Locality, assortment, and network evolution. *Journal of evolutionary economics.* 30 (3), 867-889.

APPENDICES

APPENDIX 1. Interview questions in English.

Theme 1: Basic information of the organization

- What is your role in the company?
- How much do you work with Greenreality Networks related tasks? Which tasks?
- How many Greenreality related projects has the company took part in?

Theme 2: Experiences, collaboration, and learning in GRN

- In your understanding, for what reason is your company a member of GRN?
- How has the employees in your organization instructed to take part in the Greenreality Network?
- How does the company you work with benefit from having a membership in the Greenreality network?
- How is you company collaborating with other member organizations?
- Please describe a successful collaboration experience.
- Please, describe an unsuccessful collaboration experience.
- How would you describe your trust in other companies work / working for the common good of the network?

Theme 3: Communication and learning in GRN

- What do you consider to be engagement in a business network?
- How does the current communication of the Greenreality Network work? Can you give some examples?
- How actively does the company communicate in the Greenreality Network?
- How would you develop the communication in the Greenreality Network? What would this mean for your company?
- What has your company learned from the Greenreality network? What kind of experience was this? / Why not?

Theme 4: Strategy and management in GRN

- What is your company's goal for collaboration in the Greenreality Network?
- Are your company's and the Greenreality Network's goals in the same direction? How?
- Which things should be developed in the GRN network?

APPENDIX 2. Interview question in Finnish

Teema 1: Organizaation perustiedot

- Missä roolissa työskentelet yrityksessä?
- Kuinka paljon työskentelet Greenreality Networkiin liittyvissä tehtävissä? Millaisissa tehtävissä?
- Kuinka monessa Greenreality Networkin projektissa yritys on ollut mukana?

Teema 2: Kokemukset, yhteistyö ja luottamus GRN:ssa

- Miksi yritys on Greenreality Networkin jäsen sinun tietojesi mukaan?
- Kuinka yrityksenne henkilöstöä on neuvottu toimimaan Greenreality Networkissa?
- Kuinka yritys on hyötynyt Greenreality Networkiin kuulumisesta?
- Millaista yhteistyötä yritys tekee Greenreality Networkissa?
- Voisitko antaa esimerkin onnistuneesta yhteistyöstä?
- Voisitko antaa esimerkin epäonnistuneesta yhteistyöstä?
- Kuinka kuvailisit luottamusta Greenreality Networkin jäseniä kohtaan? Mistä tunne on tullut?

Teema 3: Viestintä ja oppiminen GRN:ssa

- Mitä kaikkea osallistuminen yritysverkoston toimintaan mielestäsi käsittää?
- Kuinka tämänhetkinen viestintä verkostossa tapahtuu mielestäsi? Voisitko antaa esimerkkejä?
- Kuinka aktiivisia jäseniä olette viestimään Greenreality Networkissa? Miten tämä näkyy käytännössä?
- Miten kehittäisit tämänhetkistä viestintää verkostossa? Miten se vaikuttaisi teidän yritykseenne?
- Mitä yritys on oppinut Greenreality Networkilta? Millainen kokemus tämä oli?

Teema 4: Strategia ja johtaminen GRN:ssa

- Mikä on yrityksenne tavoite Greenreality-yhteistyön suhteen?
- Millaiset strategiset tavoitteet verkostolla on? Ovatko ne yhdensuuntaiset yrityksenne tavoitteiden kanssa?
- Mitä asioita Greenreality Networkissa tulisi kehittää?

APPENDIX 3 Codes in NVivo

The codes have been translated from Finnish to English.

CODES	FILES	REFERENCES
Interviewees role in the organization	9	13
Organizations instructions about GRN for their employees	8	9
Benefits	9	60
Things that affect receiving benefits	7	25
Achieved benefits in GRN	9	31
Overall benefits on interorganizational networks	2	4
Trust	8	21
Things that affect trust formation	8	13
Own experience of trust in GRN	7	8
Learning	9	17
Learned things	9	13
Things that affect learning	3	4
Activity	9	91
How active the member is in GRN + what activities the company has taken part in	9	34
Things that affect members activity in GRN	9	57
Positively affects	7	21
Negatively affects	9	36
Strategy	9	28
Awareness of GRN strategy	9	17
Member organizations strategy's relationship to GRN strategy	8	11
Objectives	9	40
Objectives when joining GRN	8	10
Current objectives from GRN membership	8	30
Development of GRN	7	29
Development ideas	7	19
Current issues	3	10
Communication	9	86
Development of communication + issues in communication	8	26
Development of internal communication	8	15
Development of external communication	7	11
Current communication + communication channels	9	34
Current communication	6	10
Communication channels	9	18
Things that affect communication	5	6
Organizations own activity in GRN communications	9	26

Collaboration	9	62
Thoughts about collaboration	5	9
Succesful collaboration	6	12
Unsuccesful collaboration	7	10
Forms of GRN collaboration	8	28
Innovation	2	3

APPENDIX 4 Example of text coding in NVivo

Coding examples have been translated from Finnish to English.

Example codes	
Code	Quote
Development of external communication	*"Greenreality message should be pushed for public awareness. That is something that should be improved if possible."*
	"Regarding external communications, I have for years thought it is important to achieve areal knowledge about this network. When awareness if achieved it starts to generate a lot of positive things for the network (…) That has not yet been achieved and I think communications could put more emphasis on that."
Development of internal communication	*"I would develop [internal communications] towards the same direction it has been developed in other similar Teams organizations. Basically, Teams is a communications format that differs from emails. In emails you can sed your email to thousands of people and that's it, there is goes to someone's spam filter. You just push your own message. You should understand Teams is push and pull and it is based on people's own activity."*
	" Maybe if the internal meetings were shorter it would be easier to find time to take part in them."
Communication channels	*"Communications also happen through different kind of meetings and events."*
	"Communications has changed to communication in digital channels completely during Corona."
Current communication	*"To be honest I do not know [in which channels the network members communicate]"*
	"The current chairman is very good. I do not talk about the old ones, but the current. He is really good in his task. He has been able to create a very good conversation culture to the steering group. It is actually really nice to go to these meetings."

APPENDIX 5 Examples of high and low motivation identification

Motivation identification examples have been translated from Finnish to English

	High	*Low*
Motivation for collaboration	*"We are intensively seeking for local collaboration."*	*"The network is more a local actor and I am more an international actor. (…) I sometimes come and join [GRN] events.*
Motivation for communication	*"I am part of [GRN] communication group"*	*"I haven't simply had time to follow what is going on."*
Motivation for learning	*"I have learned in many ways. (…)"*	*"I do not know [what I have learnt.] You do not necessarily enter collaboration to learn."*
Feeling of trust	*"I trust member organizations. We have had good collaborations in my opinion."*	*"One problem we have is what I already stated [about competitors]. The trust is not totally [there]. We are involved and wait to see what happens"*