

# The complexities of establishing communicative rationality in cluster projects.

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## Preface

This master's thesis is an exploratory study of an "extreme case" (Yin,2018), that aims to reveal insights into the formation of an e-commerce-based cluster project. As such, this thesis explores the relationship between existing cluster theories and their transferability to cluster projects. Representatives from Kristiansand Business region contacted the University of Agder faculty of innovation to establish a collaborative knowledge development project in cooperation with them. The initiative aims to involve students in the cluster project as a cooperative project to gain further insights into the developmental process and the unique challenges and opportunities related to the evolution of the cluster project. As such, two students were allowed the rare opportunity of observing the process of generating an e-commerce-based cluster. Special thanks to all the members of the cluster project for contacting us and providing information and access to taking part in meetings and a workshop between them and Innovation Norway. I would also like to thank the professors and experts for providing several fascinating and theoretically informed insights and perspectives. Lastly, and most importantly, I would like to offer special thanks to my supervisor, who has been a tremendous help during the entire thesis development process. I would also like to send my regards to my co-students who offered support and motivation throughout the process.

## Abstract

The research objective of this thesis was to explore how cluster projects may develop into emerging clusters through utilising existing cluster theories. To explore this objective, the research problem thus became the transferability of existing cluster theories towards cluster project. This was done through examining existing cluster theories and applying them towards a case, which is an e-commerce-based cluster project aiming to emerge as a cluster. Due to the current pandemic the observations made were limited, and as such the method used was adjusted to include expert opinions to answer the hypothesis; "Cluster projects require the establishment of communicative rationality to evolve into an emerging cluster. «The rationale behind this communicative perspective was established through the empirical and theoretical research process. Evidence found suggested that cluster emergence requires the establishment of a common vision and language, which this thesis argues requires communicative rationality, proximity, and strong relational ties to realise. In addition, a knowledge gap in the cluster literature related to the focus of geographical co-location and operation within a singular

industry was criticised. Lastly, the thesis argues implications regarding the importance of social proximity and the importance of strong ties during cluster project.

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## Introduction

The world is rapidly moving towards a more sustainable and transparent society, partly due to a progressively digitalised everyday existence. More people than ever have access to the internet, which includes a drastic change within the market with previous retail-only stores such as Meny, H&M, and Apotek1 increasingly having a presence in online spheres. This trend has become even more evident after the shock-digitalisation that followed the covid pandemic and the following restrictions on physical interaction. As a result, many firms and customers have become pushed towards e-commerce as an alternative to traditional storefronts. This master thesis seeks to explore the transferability of cluster-related theories to cluster projects, especially concerning the transferability of positive externalities of co-location, the sharing of tacit knowledge, and interactive learning. In addition, it aims to explore how cluster projects which do not adhere to the rationale of aiming to create clusters within the same industries may relate to existing theories.

The background for this thesis stems from an initiative by Kristiansand Business Region who in 2020, started establishing a cluster project aimed at establishing an e-commerce-based cluster. Initially it was planned that this cluster project would begin in the Agder-region, but the aim is to become a cross-regional cluster. During the autumn of 2020, they contacted the faculty of innovation intending to engage a partnership between master students and Kristiansand business region. The goal was to get an objective academic perspective for use as an exploratory study into the engineering of clusters in Norway, specifically related to cluster projects.

Whilst researching the subject of clusters, the commonality of geographical closeness seemed frequent. In addition, most cluster theory focuses heavily on the synergy found within the same

or supporting industries. The cluster project aims to become a centre of knowledge development and innovation as well as a place for relationship building and collaboration to take place. The cluster project differs from most existing clusters in that the only commonality between them is their business model focused on e-commerce. There seems to be a knowledge gap in the cluster theories concerning an e-commerce-based cluster. This gap could be due to the rapid increase in e-commerce in many ways being a phenomenon of approximately the last 15 years. The cluster project initiated by Kristiansand Business region is the case study of this thesis. As such, it is the lens which the theories will be put through to answer questions related to the emergence, growth, and innovation in clusters.

Firstly, a theoretical framework focusing on relevant theories will be established to explore the research question in conjunction with the primary data. The empirical data collected consists of observations, interviews, and conversations with core members of Kristiansand Business Region. In addition to the initiating Kristiansand Business region representatives, the cluster project currently consists of 8 project board members. The empirical data is based on observations of the representatives of the firms during a Workshop initiated by Norwegian Innovation clusters. In addition, interviews were conducted with a representative from Kristiansand Business Region referred to as “project facilitator”, a reference which is argued in the methods chapter of this thesis. In addition, interviews with experts within innovation and regional fields of work were conducted to supply the empirical data and add depth to the topics explored. The main topic of this thesis is, as the title suggests, the complexities of establishing communicative rationality in a cluster project. An issue that presented itself was related to how such a cluster project would connect to existing theories related to clusters. To explore this transferability, expert opinions from leaders and professors in related fields of study were conducted and analysed in relation to the chosen theories. As it pertains to cluster related theories, they tend to assume geographical co-location and some level of correlation or synergy in the trade the cluster revolves around. Secondly, it was found that most cluster-related theories revolve around naturally emerging clusters rather than the engineering of clusters through policies and facilitation. Lastly, it was found that most cluster related theories focus heavily on the idea of firms within the same industry. As a result, the main topic within this thesis is how cluster related theories can be applied to cluster projects to facilitate growth and innovation. The basic logic behind clustering is that clusters lead to advantages that firms would not gain independently. These advantages are often related to increasing the available knowledge and

innovation capacity within the cluster, thus giving the firms increased growth and sustainability. The first parts of the theoretical framework are related to the topic of clustering and innovation.

It was established that innovation is more than the generation of ideas or knowledge within firms. Knowledge development and innovation requires a structure and processes within the cluster that enables the emergence of new products, processes, or services and the spread of said innovation through diffusion. This thesis explores communication within clusters and cluster projects and how efficient communication is a requirement for continued growth and cluster emergence. Based on this logic, a hypothesis was established:

Cluster projects require the establishment of communicative rationality to evolve into an emerging cluster.” To highlight and analyse this hypothesis, supporting theories regarding the concepts related to social capital, proximity, relational strength, and cluster facilitation were used, amongst others, to form different outlooks and possible points of analysis.

## Theory

Cluster-oriented political interventions have become a core aspect of Norwegian regional politics. In recent years, policymakers have increasingly focused on regional innovation strategies and incentives. Clusters have become a core aspect of this regional innovation focus with the introduction of renowned cluster programmes such as Arena, Arena Pro and GCE. These programmes are funded by the state and operated by Innovation Norway with the aim of improving the innovativeness of Norwegian firms. These programmes aim to firstly, develop the innovation capacity and growth in small and medium businesses. Secondly, to improve the positioning of Norwegian firms on the global market, and thirdly to develop new business models and possibilities across sectors and technologies (Norwegian Innovation Clusters, 2019).

Theories on the topic of clusters are vast and numerous, but overall tend to be divided into three main approaches:

1. A social network perspective angled towards communication and social capital.
2. A network-based view with regional and national networks in focus.
3. A governance perspective based on efficient cluster leadership.

Initially, a decision was made to focus on the social network perspective. This is due to the infancy of the cluster project and, therefore, a lack of systems and governance-related findings. A network perspective with the notion of regional and national innovation systems as important

growth facilitators will be explored on a structural level. Regarding a social-network perspective, the focus will be aimed towards social capital and communication as ways to sustain growth. Concerning a governance perspective, cluster facilitation was added due to the prevalence of leadership questions emerging from the actors within the cluster project.

## 2.1 Innovation systems perspective

Seeing as defining and putting things into categories seem to be a very human thing to do, there naturally exists a plethora of definitions of the term “Innovation”. Generally, most of these definitions seem to agree on a few core points. Perhaps the most cited definition is by famous sociologist Joseph Schumpeter, who proposed innovations as «new combinations of existing resources” (Schumpeter 1934 p.65). Innovation is often not linear. The focus on step-by-step innovation processes tends to be faulty because, whenever an attempt is made to do something or create something new, the risk of failure exists (Fagerberg, 2005. p.8-9). Innovation is based and dependant on the environment, thus it tends to present itself differently in different regions and nations. The environmental dependency of innovation also leans towards a tendency towards the formation of clusters (Marshall 1920).

The innovation system perspective stems from Karl Marx and Joseph Schumpeter being amongst the more recognizable names within the tradition. The innovation systems perspective looks at how innovation is the lifeblood of competitiveness and growth within firms and countries and how innovation systems facilitate innovation through the connections between actors within the system. The systems approach looks at innovation systems as comprised of an explorative subsystem and an exploitation subsystem, which in conjunction comprises an innovation system when the interactions between the actors and are systemic and continuous. (Asheim, Isaksen, Trippel, 2019 s.6-8). In a broader sense, innovation from a systems perspective is said to be the result of “collaborative and cumulative learning processes that formal and informal institutions shape at various spatial scales” (Asheim et al. 2019., p.13). In other words, the systems perspective relies on an interactive understanding of innovation as a collaborative process taking place between the actors within the system over time.

Regional innovation systems (RIS) attempt to establish and nurture innovation activities through regional politics or national politics in the case of national innovation systems that encompass a nation’s innovation system. Both innovation systems are established and

maintained by firms and policymakers with the core intent to further innovation activities on a regional or national level in the case of NIS. RIS generally consist of

1. The firms which comprise the primary industry the cluster was built upon and any supporting firms, and
2. The institutional framework (infrastructure), which constitutes knowledge generators including universities as well as research facilities and supporting institutions such as policymakers and financial actors (Asheim & Isaksen, 2002).

As such, RIS can be seen as feeding grounds for clusters that they utilize to grow and sustain themselves and, in turn, the RIS itself (Asheim & Isaksen. 2002. p.83-84). A problem with the innovation politics, as proposed by Rune Fitjar, is the tendency towards political measures focused regionally; this tends to strengthen existing profitable markets within regional borders, which may lead to Lock-in due to stagnancy and dependence on some very profitable market sectors. In Norway, the most glaring example of this is perhaps the oil and gas sector. Rune Fitjar emphasizes cooperation between regions being a significant force in driving a nation's capacity for innovation. Fitjar adds that this is particularly the case over time and, as such, crucial for maintaining sustainability in innovation policies (Fitjar et al., 2016. p.15-16). Innovation is based and dependant on the environment, thus it tends to present itself differently in different regions and nations. The environmental dependency of innovation also leans towards a tendency towards the formation of clusters (Marshall 1920).

The explorative subsystem primarily refers to knowledge creators such as schools and universities, research organizations and organizations that create and distribute knowledge. The exploitation subsystem includes firms and clusters of firms that use the knowledge retrieved from the exploration subsystem. However, it is mentioned that firms naturally also create and develop knowledge. The nature of the systems perspective tends to mean that coordinated market economies have a better fit regarding innovation systems than more market-centric countries, such as the United States, where organically established innovation ecosystems bottom-up rather than top-down legislative systems are more in line with the economy (Asheim et al., 2019 s. 8-10).

The innovation system perspective can be partly supported by a regionalization rationale popularized by porter and explained by Asheim and Isaksen as regional resources are essential for creating long-term competitiveness by utilizing unique regional resources (Asheim &



Isaksen, 2002, p. 77-78.). Regional innovation systems (RIS), which are too internally focused and does not interact much with external knowledge bases, are referred to as “territorially embedded”. These have a high degree of proximity which can be harmful as it tends towards lock-in. The second type of RIS discussed refers to “networked” RIS, which are also embedded regionally, but with a high degree of interactive learning within the innovation system. However, this interactive learning tends to be localized. In short, a networked RIS consists of firms supported by local institutions wherein there is some interaction with knowledge-generators such as universities. The last form of RIS is the national RIS which distinguishes itself from the aforementioned forms of RIS by being strongly connected to national or even global innovation systems, and thus the innovation activities are not locally rooted in a way that can be argued for the other forms. In conclusion, RIS must attain and sustain unique “sticky” internal knowledge as well as external “ubiquitous” knowledge to be competitive (Asheim &Isaksen 2002).

## 2.2 Co-location **and** clusters

Sometimes agglomerations of firms form clusters of actors such as firms and universities, which can develop into an innovation system over time. This requires more formalized modes of cooperation and co-innovation between the actors and a solid institutional foundation to support the innovation system. Regional clusters are: “places where close inter-firm communication, socio-cultural structures and institutional environment, may stimulate socially and territorially embedded collective learning and continuous innovation” (Isaksen, 2019, p.83). As Isaksen notes, one of the crucial aspects of clusters is their tendency to support innovation through learning between firms and actors. However, we will explore how innovation is not necessarily the result of clustering in this chapter, in addition to the possible advantages.

The most famous cluster theorist is likely Porter, who popularized the cluster terminology in 1990. His most famous work related to clusters was written in 2003 when noted that clusters constitute a significant differentiator distinguishing the economic strength and the innovation activities within regions. Porter famously defines clusters as a «Geographically proximate group of interconnected companies, suppliers, service providers and associated institutions in a particular field, linked by externalities of various types» (Porter, 2003, p. 562). Cluster theory stems from theories of industrial districts wherein Marshall (1920) was one of the founding fathers.

Clusters can in short be seen as promoters of heightened competitiveness and productivity by establishing communication and knowledge spillover across firms within them. They aid firms by prompting and facilitating organization, cooperation, and competitiveness within the cluster. The benefits of clustering are reaffirmed by academics and the existence of successful clusters such as Silicon Valley and Node. Node provides cutting edge maritime technology worldwide, whilst the is perhaps the most known cluster worldwide due to its success. The way to obtain and take advantage of said benefits is perhaps a more perplexing topic.

The topic of industrial relatedness is often heavily focused upon by theorists and policymakers. However, some theorists, such as Doeringer and Terkla (1995), have criticized this narrowness. They argue that firms do form clusters across industries for three main reasons. Firstly, through gaining advantages by utilizing the same production channels, which include suppliers and manufacturers. Secondly, through the transference of knowledge in the labour market. Thirdly, through government programmes and unions (Doeringer & Terkla, 1995, p.228-229).

Trippl, Grillitsch and Isaksen, supported by Boschma (2014), argue that bridging social capital, diversity in industrial structure, organizational thickness and institutions specific to regions facilitate and enable, or hinder the emergence of clusters in said regions (Trippl, Grillitsch, Isaksen, 2015, p.7). They note that clusters emerge, much like industrial districts (Marshall 1920), when “economies of scale and spillovers gain momentum,” which provides economic advantages and profits for the firms within as well as attracting actors towards the emerging cluster (Trippl et al. 2015). A theory that focuses specifically on the development of clusters is the “cluster life-cycle” approach which has seen great success in academia in recent years.

### 2.1.2 The cluster life-cycle approach

The cluster life cycle approach suggests that clusters go through distinguishable phases during their “lifetime”. There are several versions of the cluster lifecycle framework with differing paradigms surrounding them. Still, they share the commonality of having some sort of emergence phase, a phase in which growth occurs. However, the potential is still not utilized. Secondly, the theories tend to share a stage in which the cluster has reached its maturity, and lastly, some sort of “final” stage or revitalization (Belussi & Sedita, 2009). Lastly, the frameworks differ the most in the last phase. Some theorists base their argument heavily on the path-dependency model of lock-in and decline in line with path-dependency literature (Ingstrup & Damgaard, 2011). Belussi and Sedita (2009), whose paradigm revolves around triggering

factors, which prompt a cycle of development from one lifecycle stage to the next, propose three possibilities: Stagnation, revitalization, or decline (Belussi & Sedita 2009). The reason why “final” is in brackets is that, as revitalization proposes, it is not necessarily the final cycle. However, as illustrated by the car industry in Detroit or the boating industry in southern Norway, it certainly can be. One possible triggering factor could be an external threat in the form of competing firms prompting innovation and diversification, simply put, any process that leads to generating new ideas and thus evolution. Belussi & Sedita further categorize these triggers into endogenous change within firms, for example, in the form of cost leadership, or external shocks, for example, new regulations regarding the production of goods (Belussi & Sedita 2009, p.508-510).

Menzel and Fornahl propose an alternative variation (2010), which focuses on the knowledge development within clusters and how knowledge is shared and affected by heterogeneity. The argument is that a degree of heterogeneity of firms within the cluster determines how innovative the cluster is because the firms have to be “sufficiently different” in order to draw advantages from each other and thus share and develop new knowledge within the cluster (Menzel & Fornahl, 2010, p.230-231). As such, firm heterogeneity, which can be understood as a variety of knowledge and competencies between firms, becomes an important factor affecting the cluster life cycle. Following this logic, a lack of heterogeneity and varieties in competencies in firms compromising a cluster leads to decline and stagnation. In contrast, a higher degree of heterogeneity may lead to innovation and thus renewal, and therefore long-term prosperity. Menzel and Fornahl propose four lifecycle phases: Emergence, Growth, decline and renewal, which depend on the ability to foster and draw advantages from the heterogeneity within the cluster. In other words, the variation in knowledge between the firms. According to Menzel and Fornahl, the possibility of a cluster emerging is dependent on the existence of technological relatedness between firms. They add that clusters in the declining lifecycle illustrate how advantages of organizing within clusters are not permanent because the same factors that made the cluster profitable during the cluster’s emergence may cause stagnation in the future. Thus, taking part in a cluster may increase firm performance during the start of the cluster lifecycle but may, in turn, prove detrimental towards the end of the cluster lifecycle, especially if the heterogeneity between the firms is reduced over time (Menzel & Fornahl 2010).

The life cycle approach is in part highly connected with the path dependency literature because clusters have to reinvent themselves or perish as they mature, and a lot of clusters tend losing the focus on reinvention and innovation towards efficiency and profitability (Ingstrup &

Damgaard, 2011, p. 4-5). As pointed out by North in 1990, the current institutional matrix results from past choices such as investments and policies that generate profits today. The problem with this is the tendency towards dependency, wherein regions and sometimes countries tend to rely heavily on specific paths extensions (Belussi & Sedita 2009). An example could be the oil industry in Norway which will eventually stagnate due to oil being a limited resource, whilst large regional innovation systems and clusters are specifically engineered towards particular sectors. The cluster lifecycle approach has been critiqued for being too simplified and deterministic. However, if looked at as a framework or heuristic device, that is a simplified model of the complexities of reality (Trippel et al., 2015). As such, whilst the theory is a practical framework because it provides testability, it may be partly reductive as it does not consider contextual and place-specific factors (Boschma & Fornahl, 2011). These concerns are acknowledged, and as such, the inclusion of the innovation systems perspective and region-specific characteristics were taken into consideration in this thesis. Menzel & Fornahl also noted that a weakness related to the lifecycle approach is that it tends to take a reductionist stance, especially regarding the importance of actors in cluster evolution (Menzel & Fornahl, 2010). However, it is still regarded as one of the most utilized theories related to cluster evolution.

Arne Isaksen interviewed 30 firms within the Southern Norwegian boat industry. He argues along the lines of Malmberg and Meskell that regions have a “memory that directs the path of subsequent development (Malmberg and Meskell 2010 p.391). He proposes that the firms went bankrupt due to the existing memory and commonly told history that they could not mass produce boats because they had stories that previous firms had gone bankrupt due to attempting production. This caused stagnation due to failing to compete with international firms. This is an example of path dependency wherein the boating industry of southern Norway was unable to change in accordance with market trends. More specifically, the path dependency was caused by the firm’s way of interpreting the history of the region, and thus the result of a simplified form of collective knowledge (Isaksen, 2018, p.241-255).

The path development approach is based on the idea that innovation is a localized phenomenon that is highly affected by regionally or place-specific attributes and conditions (Martin, 2010, p.20). This means that path development takes time to present itself because it is inherently based upon the region’s historical development. Different regions thus have varying conditions which in turn leads to different opportunities across regions. For example, thin regions are more perceptible to becoming trapped in path extension and less likely to enable path renewal and creation unless they get some sort of external aid (Isaksen, 2014).

However, path dependency is not always negative as it can create new jobs and industries through prosperity and production, at least for a while. It becomes negative when and if it does not allow path creation to occur, in which lock-in takes place (Isaksen, personal communication, March 27, 2020). Lock-in is an inflexible outcome characterized by inability to innovate and grow, and thus unfavourable in a long-term perspective.

### 2.1.3 Cluster facilitation

Whilst the attention to the cluster lifecycle approach has enjoyed a lot of attention in recent years, the same cannot be said for the topic of cluster facilitators. Cluster facilitators play an important role in nurturing the clusters' competitiveness through its life cycle through cluster facilitation (Ingstrup & Damgaard, 2011, p. 2-3). A facilitator is involved in aiding the growth and process of cluster development and the coordination of activities within the cluster. An example of a cluster facilitator can be a pioneering firm or government aid programme. Some clusters develop organically without these facilitators, however. Most are supported by these cluster facilitators, such as through government funds or pioneer firms (Ingstrup & Damgaard, 2011, p. 3-5). In the cluster facilitator literature, it is common to differentiate between internal facilitators who know the cluster or organization and an external facilitator who is "objective and impartial, able to confront when necessary" (Ingstrup, 2010, p.27). Ingstrup points out that whilst some theorists argue that neutrality is important, others such as Berry (1993) argue that impartiality is both impossible and unimportant. There are, however, five commonly acknowledged attributes which good cluster facilitators should inhabit which are:

1. Humility
2. Flexibility
3. Sincerity
4. Professionalism
5. Awareness

Humility relates to listening to the beliefs of others and not enforcing personal beliefs unto employees and coworkers. Flexibility relates to openness and aversion to lock-in. Sincerity relates both to empathy and the ability to act in relation to the facilitator's beliefs and values. Professionalism relates to integrity, confidence, and the ability to handle relations in a professional manner. Lastly, awareness relates to the awareness of the facilitator role and ensuring progress is made within the cluster and in-cluster projects (Ingstrup, 2010, p.28).

These facilitators are further divided into three distinct roles by Ingstrup (2010), the framework-setting facilitator, the project-oriented facilitators, and a combination of the two. All three roles rely heavily on the facilitator being perceived as trustworthy and their ability to foster a trust-based climate within the cluster.

Firstly, a framework-setting facilitator can be identified by their angling towards the strategies, conditions, and overall cluster framework within the cluster. A framework-setting facilitator is, in practice, an organizing and strategizing facilitator who focuses on making the correct decisions with the conditions of the cluster in mind. They attempt to improve the cluster framework and increase cooperation through strategizing and setting clear goals. According to Ingstrup, the framework setting facilitator should ideally inhibit the attributes of professionalism and sincerity strongly when considering the five ideal characteristics of a facilitator (Ingstrup, 2010, p 32-35).

Secondly, a project-oriented facilitator can be regarded more in line with the remaining three attributes, namely awareness, flexibility and humility, which are more in line with openness. Openness is particularly important because it relates to innovativeness within firms, as proposed by several theorists such as Drechsler & Natter. They also pointed out that some critical factors that prevent firm openness include knowledge gaps and inadequate property protection (W. Drechsler & Natter, 2012 p.438-445). As the name implies, the project facilitator is generally more project-oriented, which means they focus on the performance and coordination of the project portfolio within the cluster. As such, they tend to be more engaged in managing projects and activities rather than the framework itself. To accomplish this, Ingstrup adds that project facilitators tend to be largely ambitious and focused on creating a culture based on mutual trust and support to realize their project ambitions (Ingstrup, 2010, p.34-35).

Thirdly, the all-around facilitator combines the project and framework approach. They enable the combination of all the overarching goals of increasing cooperation within the firm and the framework orientation's focus on new products and services of the project orientation. In addition, they should encompass all five of the ideal facilitator attributes and be able to involve themselves on an operational level in line with project orientation- and on a strategic level in line with a framework orientation. (Ingstrup, 2010, p.34-36).

## 2.3 Social capital

The term social capital has many and, at times, contradictory definitions. Sometimes, social capital is used alongside the term human capital and, at times, interchangeably. Whilst human capital and social capital are interconnected, they are certainly not the same for a few reasons. Human capital refers to the knowledge and skills an individual possesses, but social capital refers directly to the structure of relations between individuals rather than any single individual's abilities. In other words, social capital may refer to the knowledge spillover between individuals, hence the term «social» capital. Arguably, the most known definition was proposed by J.S Coleman (1988). He suggested that social capital «facilitates certain actions of actors within the structure, » wherein he is referring to social structures such as firms and families (Coleman, 1988, p.96). In firms, this could relate to how one employee gains the advantage of social capital between themselves and a co-worker through sharing their praxis and know-how. Hofferth, Boisjoly and Duncan explain (1999) that the core of Coleman's theorem is the presumption that interpersonal ties and networks can be of assistance to individuals depending on how strong the relational ties are. The relational strength is based on expectations, relational exchange, informational exchange, and the norms and sanctions present in the network or relationship. Relational expectations and obligations can be understood as a form of investment into a relationship or network. The basic idea is that assistance today should result in some sort of exchange in the future, a kind of return on investment if you will. Hofferth adds that Coleman did take into consideration that simply altruistic actions also take place between actors (Hofferth, Boisjoly et al., 1999).

Hofferth, Boisjoly and Duncan (1999) argue that social capital is not a form of capital at all. It lacks some core properties of the capital term, such as existing in relations rather than individuals or assets, which means that it cannot be removed from said relations. (Hofferth & Boisjoly et al 1991, p. 81-84).

However, others argue that social capital can be regarded as capital if we consider sympathy as a term component. Robinson, Schmid & Siles (2002) regard sympathy as the core and «what» of social capital, in that it facilitates benefit for a recipient through a provider of social capital. As such, they defined social capital as follows: «Social capital is a person's or group's sympathy toward another person or group that may produce a potential benefit, advantage, and preferential treatment for another person or group of persons beyond that expected in an

exchange relationship» (Robinson, Schmid, Siles 2002, p.6.). This definition retains the relation and functions-based properties presented by Coleman, but with the addition of the concept of sympathy as a distinguisher (Robinson et al. 2002, p.1-21).

## 2.4 Embeddedness

Granovetter was among those who critiqued and aided Coleman in his creation of the human capital theory. A weakness of the human capital perspective, and indeed the value of relational ties proposed by Granovetter, is that often it is the weak ties that lead to creativity and innovation. Coleman noted that Granovetter was one of the first to recognize and point out how institutional economics failed to recognize the value of «concrete personal relations and networks of relations – what he calls embeddedness - in generating trust, in establishing expectations and in creating and enforcing norms» (Coleman, 1988. P.97). Granovetter proposed that economic transactions are inherently embedded in social structures, and as such there is no such thing as an exclusively economic action, social networks are always present (Granovetter 1985).

Relational strength is a combination of emotional intensity, time spent nurturing the relationship, or simply together, and lastly, the degree of mutual commitment between the parts, in other words, intimacy. Granovetter argues that the relationship between these factors, the factors determining relational strength, is probably linear and intuitive (Granovetter, 1973, p.1360). Relations are simultaneously independent and interconnected and characterize the strength of the “tie”, in other words, the intrapersonal relationships between two individuals. Granovetter distinguishes between three types of ties, strong, weak and absent. Granovetter makes no clear distinction between a strong and a weak tie. Still, he implies that weak ties share some characteristics with strong ties, albeit to a lesser degree, and perhaps they are more absent in one or two of the three dimensions which constitute ties. One could argue that one reason for the lack of such a threshold is likely due to the complexities involved when discussing interpersonal relationships. It is difficult to assert when a tie crosses the “threshold” and becomes strong because this could depend on subjective interpretations of what strong and weak ties entail. However, the strength of a relational tie is not necessarily linear as it can grow weaker and stronger over time if one of the factors determining the strength is changed, such as the time spent with the other person decreasing (Granovetter 1973).

Absent ties, which is a lack of presence in any of the three dimensions, but also includes the lack of significant bonds such as the relationship one establishes with service employees, for



example. The second tie variant relates to weak ties wherein only one or two of the three dimensions constitute a strong relationship. For example, they may spend a lot of time together, but they may lack a level of intimacy. An example could be co-students and colleagues who work well together but don't hang out in their spare time, thus the time dimension and intimacy and emotional intensity may be less than that of a stronger tie. As such, the last type of time Granovetter established are strong ties, which tend to be defined by a more significant time commitment, a degree of emotional intensity and intimacy, such as the tie between close friends (Granovetter, 1973, p.1360-1362).

Based on the strength of ties, he furthered a hypothesis that proposed that any two individuals presented ties to a larger structure of ties, a network of ties. A stronger tie between a dyad (pair) correlates to a larger subset of commonly known individuals with weak or strong ties. He furthered this point by presenting an argument by Homan (1950 p.133) that more interaction between individuals is related to an increase in similarities between them. Granovetter argues that stronger ties result in a higher chance of interacting with each other's networks. As such, time = similarities (Granovetter, 1973, p. 1362). A bridge is a point in a network that provides a single path between two points and the only "bridge" for information and influence to flow between two points. Granovetter points out that "no strong tie is a bridge, but all bridges are weak ties" (1364). Simply put, Granovetter bases his theorem on the logic that a local bridge must be a weak tie because a local bridge is a tie that forms a bridge between two networks that would separate the networks if removed. Weak ties are more powerful from a marketing perspective because they offer a greater flow of possible ties and thus information flows and potential customers. This is partly because strong ties tend to include a more considerable degree of overlap, as they share more social networks and friends. Strong ties related to dense network forms, whilst weak ties tend to be less dense (Granovetter 1973, p.1366-1370).

Granovetter argues that in a triad of three ties wherein there is one common bond between individual A and B, but not between B and C it is of the least possibility that there is a strong tie between A and B, A and C, but an absent tie between B and C, and that this probability decreases further the more time both parts spend with A. It must be noted that a low likelihood does not mean that it does not happen. Still, Granovetter's theory of triadic closure implies that a relationship between A-B and A-C means a high probability of a relationship existing between B and C. One explanation is tied to the theory of increased similarity. The theory of increased similarity proposes that B-C, seeing as they have a lot in common with A, probably also have a lot in common. Secondly, if B and C want to spend more time with A, they likely will interact

as a result. This assumption of strong triadic closure is the main gripe many theorists have for Granovetter's theory, partly because it narrows the complexity of reality. In practice, it could be the case that A did not desire for B-C to interact, which could, in theory, stop the information flow between them or refuse to let them meet and, as such, limit their interaction. In addition, the idea that increased interaction leads to similarities is also a simplification, although accurate in many instances. One could argue that Granovetter's theorem is narrow considering the complexities of interpersonal relationships.

## 2.5 Proximity

Boschma investigated opportunities and limitations related to the proximity between actors and how it could affect interactive learning and innovation. His reasoning behind focusing on interactive learning is due to the belief that learning leads to lasting competitive advantage and sustainability through innovation. Boschma also considered the importance of non-economic factors and geographically unique characteristics when considering differing growth rates in regions. However, he has developed the proximity term into meaning more than simply co-location, agglomeration, or geographical proximity. He proposes that there are four other dimensions of proximity in addition to the dimension of geographical proximity. He suggests that firms should consider all five dimensions, as they influence the capacity for innovation within networks (Boschma 2005). These five dimensions which comprise the proximity term are geographical proximity, social proximity, organisational proximity, institutional proximity and cognitive proximity. All five dimensions enable and encourage interactive learning and innovation by increasing and allowing for more ease in coordination between individuals (Boschma, 2005, s.62-63).

The first dimension of proximity is the cognitive dimension which refers to how employees within firms tend to be attracted to existing knowledge bases within their workplace. The reasoning behind this is, in Boschma's terms, that individuals are subject to limited rationality and cognitive limitations, which make it difficult, if not impossible, for a single individual to behave optimally in situations. By using these knowledge bases, individuals can reduce the chance of acting in a non-optimal way. However, a weakness with cognitive proximity is that firms and individuals alike tend to seek and use existing knowledge as a form of security which may be at the cost of continuous development and novel sources of knowledge. This can lead to stagnation through lock-in (Boschma 2005).

Proximity regarding the cognitive dimension thus relates to the cumulative knowledge within firms. The cognitive dimension enables the establishment of a shared language between actors. The actors use this cognitive proximity to enable effective communication and cooperation due to shared understandings and paradigms. However, one can regard cognitive proximity as a double-edged sword. Too much proximity may cause “cognitive lock-in”, wherein routines and perceptions may cause resistance to newness and thus restrict the firm by limiting flexibility. However, a lack of proximity in the cognitive dimension can reduce innovativeness because firms may be unable to recreate and diffuse knowledge to maintain or gain a lasting competitive advantage. Referred to as a “competency trap”, this phenomenon is a term coined by Levitt and March in 1996, which refers to the problems with habits forming within firms as they may lead to stagnancy. As such, too much cognitive proximity within a firm may hinder its capability for knowledge absorption and interactive learning through relying on established habits and routines which may be hard to break. However, a lack of cognitive proximity can lead to misunderstandings and confusion, which is detrimental to innovation (Boschma 2005).

As such, too little proximity can lead to a breakdown in communication due to misunderstandings, and too much cognitive proximity may lead to embeddedness through not seeking or accepting external sources of knowledge (Boschma, 2005. P.63-64).

Secondly, organisational proximity refers to coordination within firms and organisational interdependencies within- and between firms that are connected by some form of dependency. This can be interdependent, as tends to be the case with suppliers. Boschma notes that it is difficult to distinguish between the cognitive and organisational dimension and that this was done to ease analysis. However, whilst the cognitive dimension focuses more on knowledge, the organisational dimension can be understood as the proximity of relations within firms and how they are enacted. For example, some organisations are flatter whilst others are more hierarchical, with the former having a higher degree of autonomy. Boschma concludes that strong relations between actors lead to a lower transactional cost and increased feedback between them. Hierarchical governance tends to result in less feedback than in symmetrical relations or flat organisations. Boschma notes that there seems to be less interactive learning in bureaucratic systems, which he argues is because innovation requires flexibility. Highly dependent relations may lead to inflexibility, which negatively impacts firm capacity for innovation. In other words, too much organisational proximity causes inflexible outcomes, whilst too little can result in a lack of control, opportunism, and uncertainty. Boschma suggests loosely coupled systems to solve this and proposes that they satisfy the requirement for

flexibility and control. This safeguards autonomy, brings together units through centralised coordination, and integrates new knowledge into routines (Boschma, 2005 p. 64-65).

Thirdly, Social proximity relates to the embeddedness literature, and as such, Granovetter's theorem of weak and strong relational ties. Social proximity relates to the social context of relationships between economic actors and suggests that embedded relations within a firm foster interactive learning and thus innovation. Boschma proposes that social proximity is critical to foster a climate of trust, leading to cumulative learning and commitment within firms and networks (Boschma, 2005, p.66). The rationale behind this is that organisations require trust to learn and innovate, which is based on social proximity. However, Boschma also adds that too much proximity in the social dimension can be harmful if it leads to overoptimism or even taking advantage of others by abusing a trusting social climate. Like the other dimensions of proximity, social proximity also presents itself as a dual-edged sword. As an example, a high degree of social proximity can lead to a trust-based arena for interactive learning, according to Boschma. Still, it could simultaneously be damaging through downplaying risks and overoptimism due to existing relations, potentially leading to exploitation. In addition to practising a balancing act between over-embeddedness and proximity, Boschma also points out the importance of making a shift from a market orientation towards "Communicative rationality" because he notes it as a "requirement for interactive learning" which builds on long-lasting and robust relations between individuals (Boschma, 2005 p. 64-66). Gilsing, Lemmens and Duijsters suggest that an ideal relational network structure would combine and balance non-redundant and redundant ties. They argue a balancing of the advantages related to both the innovation related to redundant ties and the availability of knowledge rooted in social relations and trust of the non-redundant ties (Gisling et al., 2007). This argument can also be related to Boschma's suggestion of a mix of embedded and market relations in the social dimension of proximity as an ideal situation and his notion of a trust-based institutional framework that is observed and balanced to reduce inertia and the chance of lock-in (Boschma 2005).

The fourth dimension relates to institutional proximity, which also concerns the relationships between actors at a macro-level rather than an individual dyad or relationship level. Too much institutional proximity can lead to inertia which is resistance towards change and a tendency towards habits. This inertia can result when interdependent institutions have too strong positions within the structure, which may cause lock-in due to failing to develop or restructure existing institutional structures. This is referred to as institutional rigidity and is an inflexible outcome because it reduces the organisation or networks capacity for innovation. As such, too

much institutional proximity can lead to lock-in and inertia if the commonly held institutions are too embedded. Existing structures may serve as gatekeepers to innovation which may, in turn, cause asymmetric power dynamics and closed social systems. However, too much institutional proximity can lead to inertia which is resistance towards change and a tendency towards habits. This is due to the commonly held institutions being too embedded. However, too little institutional proximity may lead to unstable institutions and thus opportunism and uncertainty, and a failure to establish shared values (Boschma, 2005, p 67-68). Like the aforementioned dimensions of proximity, Boschma argues a balancing act between establishing flexible and open structures which simultaneously provide enough stability to handle uncertainty and transactions within firms and networks (Boschma 2005).

The last dimension pertains to geographical proximity, or the “Physical distance between economic actors” (Boschma, 2005 p.69). Boschma noted, much like previous social network theories, that geographical co-location leads to certain advantages especially considering positive externalities of knowledge development within co-located areas. However, Boschma argued that geographical proximity does not fully explain how learning and innovation occur within firms and networks. Short distances “literally bring people together” (Boschma 2005, p.69). By bringing people together, Boschma refers to the facilitation of tacit knowledge between actors within social networks and specifies that complex knowledge require strong ties due to the requirement for feedback (Boschma, 2005, p.65). He adds that larger physical distances between economic actors correlate with more difficulty in sharing tacit knowledge and, thus, less access to these positive externalities. The main argument here is that knowledge externalities have been theoretically proven to be bounded by geographical proximity, which means that co-location leads to increased innovation. As such, Boschma argues that geographical proximity combined with cognitive proximity leads to interactive learning, strengthening the other dimensions of proximity. However, in the case of a lack of geographical proximity, the other dimensions of proximity can substitute. The reasoning behind this is that geographical proximity is an amplifier and not a prerequisite for interactive learning. However, he adds that tacit knowledge must be shared face-to-face but does not require permanent co-location. However, there needs to be clear objectives and tasks set by a central authority. In other words, organisational proximity and an established cognitive proximity established (Boschma 2005).

## 2.6 Communicative rationality

Boschma was inspired by Lundvall (1993) when he added that social proximity might lead to communicative rationality focused on openness and social interaction instead of a market-oriented environment within clusters. He also noted that it might be a prerequisite for interactive learning (Boschma. 2012. p.66). This argument suggests that the existence of communicative rationality is connected to knowledge development within organisations through the dimension of social proximity.

Philosopher and sociologist Jürgen Habermas coined the term communicative rationality in 1981 in perhaps his greatest work, “The theory of communicative action», in 1981. Johnsen (2016) explains that according To Habermas, in order for knowledge development and thus learning to take place between people, there needs to exist a commonly understood and agreed upon context. To establish this context, communicative rationality must exist between the actors. Communicative rationality is based upon widely held understandings and principles, which underly a fundamental co-understanding that creates dialogue and development in society at large (Johnsen 2016). Communicative rationality rests on three essential dimensions of validity which must be considered in relation to each other and not above or beneath. These are one, normative correctness or rightness. Second, subjective truth, honesty or evaluated truth. Lastly, objective reality or truth. In addition to these three dimensions of validity, the dialogue must be consensual and mutually understood to reach an understanding based on the logic of communicative rationality and an ideal dialogue situation as proposed by Habermas (Johnsen 2016).

Habermas discusses the interactions and frictions between the «lifeworld» and the «systems world». The lifeworld is a collection of identities, norms, traditions and culture wherein communication is “formless and “free-floating” (Habermas, 1998, p.38). The lifeworld perspective is one of the most misunderstood concepts in Habermasian theory, as stated by M.Tewdwr-Jones (1998) who explains it as the sphere of “everyday life” and as such the sphere wherein normative-communicative communication and rationalisation takes place (Tewdwr-Jones, 1998, p. 1975-1976).

In contrast, the systems world can be regarded as the spheres of administrative systems, including economic systems and law systems which help individuals orient themselves in the ever-complex world. Habermas adheres to critical pragmatism by arguing that individuals understand the world based on their experiences with people. Although he regards individuals

as autonomous and not “ruled” by the systems world, economic actors are affected by it in varying degrees across time and space. It is within the conflict between the lifeworld and systems world that the term communicative rationality was established. The core of the concept is the usage of ideal speech to further communication, leading to social action through mutual understanding and agreement. Social action is understood as action based on the mutual agreement of two actors or more (Johnsen 2016).

Communicative action relates to rationality as it lets individuals interact with different areas or spheres of life, such as the public or private spheres, with one of three strategies:

1. A Communicative strategy
2. A norm-obedient strategy
3. “Strategic”

As such, communicative action is the balancing of the individual-subjective world and the norm-driven world, and lastly, the factual and structural institutional world. Concerning functionalism and systems theory, Habermas has replaced practical reason with communicative reason. Communicative action relies on mutual understanding. In other words, a commonly understood language and the meanings conveyed are understood by all participants. Habermas has an idea of what discourse should be wherein the parts have an equal say, wherein ideas are exchanged peacefully to expand the minds of oneself and others rather than specific individuals dominating the conversations. Communicative action is achieved when action follows such discourse but with the critical feature that all participants agree on the aforementioned action and genuinely agree. Habermas distinguishes between finding a mutually agreed upon result rather than one or more actors «giving in». Habermas stems from the Frankfurt school of thought, albeit the second generation. One of his main ideas, at least concerning critical theory, is that positive societal change stems in part from open discourse. (Johnsen, 2014. p.51-53).

Habermasian theory has been criticised for being impractical. The idea of undistorted communication is unfeasible, as well as a lack of empirical evidence proving the validity behind the rationality of communicative rationality (Tewdr-Jones & Allmendinger 1998). Hook and Rienstra also propose that Habermas is partly idealistic because his communicative action and the communicative rationality it relies on lays too many expectations on the actors in that humans are flawed and do not always know their own rationale. In other words, they critique Habermas for expecting the actors who take part in communicative action to have a high degree of self-awareness (Riestra & Hook, 2006). Nevertheless, communicative rationality, creating

mutual understanding and a platform for open communication to ease social action, is helpful to consider when trying to understand how knowledge development can occur within firms and clusters, seeing as innovation requires cooperation and dialogue.

### 3. Method

This thesis results from collaborative work between the University of Agder, Kristiansand Business region and the member firms in the potential e-commerce cluster. The empirical data is based on observations made during a workshop, conversations, and interviews with members of the cluster project. However, as the data related to the case was heavily affected and reduced due to the current covid-situation, interviews with experts within different areas of cluster theory were conducted to supplement and further explore the transferability of cluster-related theories. Hopefully, this triangulation has increased the content validity, that is the constructs explored (Sarstedt & Mooi, 2014, p.36). This was done through contacting and interviewing experts within different fields related to clusters, such as policy, networks perspective, social perspective, and leadership and facilitation. Secondly, to increase the range of responses, some respondents were recruited from academia whilst others were within leadership positions related to clusters and cluster projects. The correlation or variance in their views on the same questions also provides an increased inter-rater reliability related to how they understand the transferability of the theories established in the theoretical framework, as well as how they relate to the case (Sarstedt & Mooi, 2014, p.37-38). The results of these observations and interviews were analysed in the context of the analytical framework in an attempt at shedding light on the hypothesis: “Cluster projects require the establishment of communicative rationality to evolve into an emerging cluster.”

It is important to specify that Kristiansand Business region explicitly regards themselves as a cluster project and not a cluster in any shape or form. Emerging as a functioning cluster is the long-term ambition of the cluster project (Project facilitator, 2021, section 4). Kristiansand Business region is a form of hybrid between the public and private sector. They work with local distribution in cooperation with Kristiansand municipality while simultaneously working towards the public sphere in conjunction and collaboration with firms, for example, through aiding and facilitating cluster projects (Project facilitator, 2021).

While cluster theory enjoys a plethora of scientific research, digital clusters are a relatively unexplored area in the literature. Therefore, an intensive research design based on the case study presented by Kristiansand Business region combined with relevant cluster literature and



theories regarding communication and proximity was used as an angle into the complex and new field of digital-centric cluster projects. This design coincides partly with abductive research methods, as the literature must be adjusted and analysed in relation to cluster projects rather than geographically co-located clusters. In addition, most cluster-related theories focus on firms within the same or supporting industries. As such, the case can be considered an “extreme case” (Yin, 2018). There are examples of non-co-located clusters such as The Norwegian Energy solutions cluster, and the offshore winds cluster that operate across regions. However, these do still operate within the same industry. The case-project has a long-term aim of operating across many different industries and across regional borders, and as such can be considered an extreme case as there are few to no cases which correlate as of 2021. Therefore, inspiration was taken from Busch (2013) in the creation of the exploratory abductive research method wherein movement between theory and the empirical data in the form of the case study and interviews was utilized. (Busch, 2013, p.49-52). Since the underlying paradigm of this thesis is that of interpretivism, some level of flexibility was necessary. Firstly, establishing a solid theoretical framework was necessary to create a possible point of entry into a previously unexplored area and allow the creation of an interview guide based on the theories used.

Seeing as the case study is arguably an extreme case, a decision was made early on that the qualitative research methodology seemed fitting and feasible. In extreme cases, the usage of a single case study is plausible and necessary by nature, seeing as it often presents itself as the only candidate, so to speak. Although this poses some limitations regarding the transferability of the results, it also poses a unique opportunity to research something relatively unknown, allowing new knowledge development and suggestions for further research (Yin, 2018, p.47-49).

The theoretical framework was established before the collection of empirical data, however, it had to be adjusted after discoveries found during the observations and conversations revealed that the cluster project was still so early in its creation that it must be viewed as a cluster project which in turn had an impact on the theoretical scope and focus. Secondly, it was revealed that the planned observations and meetings with the members of the cluster project would be heavily reduced and slowed down because of covid-restrictions. Therefore, a decision was made to focus on the relational and communicative aspect of cluster projects and emerging clusters rather than a broader development scope that was initially planned. In addition, the topic of cluster leadership and facilitation emerged as an important element based on the empirical data, which had to be addressed as well. However, the shift towards focusing on cluster projects and

emergence provided some important insights regarding the gaps within the field of cluster theories. In turn, this provides a suggestion towards further research into the topic of cluster projects and the engineering of clusters.

As it pertains to the empirical data collected about the case, it was quickly decided that excluding personal names for privacy reasons was necessary. The main reason behind this decision was due to the cluster project not being made public yet. This means that the names of the firms and individuals which comprise the project board have not been made public for ethical reasons. As a result, all individuals and firms referenced in this paper will be anonymous. Concerning the observations made during the aforementioned “workshop” It was clearly stated before and during the workshop that observers were participating and taking notes of what was happening for use in data analysis. The observers included two students from the innovation and knowledge development master’s programme as well as representatives from Kristiansand municipality. As such, a lot of time was spent accurately deciphering and analysing the empirical data.

However, it is impossible to analyse qualitative data without adding some level of interpretation to make the result readable and understood by others (Bailey, 2009, p. 127-128). In addition, some inconsistencies may arise due to translation as interviews and observations were conducted in Norwegian for the sake of accuracy. Thus, they had to be translated, which adds a layer of interpretation from the researcher’s part. However, as many of the theories discussed in this thesis were originally written in English, the differences are hopefully not considerable. Indeed, the problem of objectivity is of great concern, especially concerning observations.

## 4. Findings

This chapter summarizes the observations made during the affirmed workshop documented through notes referred to as “minutes of meeting” whilst the interviews are referred to as “Respondent A-D”. This chapter is divided into six main chapters, corresponding to the topics asked during interviews and theories used in the theoretical framework. This was found to be efficient as there is a great deal of overlap between the subjects discussed with the experts and the relevant findings from the workshop.

## 4.1 Workshop proceedings

This chapter considers the observations made during the workshop, which took place between the members of the cluster project, including the firms involved, Kristiansand business region and Norwegian innovation clusters. First, what was directly observable through speech will be presented in order to be distinguishable from more subjective observations, such as body language, which will be reported in section 4.2. The conflict between e-commerce and traditional commerce was brought up and emphasised by adding that more traditional stores have transitioned wholly or partly to online marketplaces. A duality was noted between the newer generations posing a more extensive market due to their proficiency with the internet whilst Norway simultaneously has an ageing population (Minutes of meeting, section 2, part 1). Representatives from Norwegian innovation clusters gave the 8 member firms a total of three tasks which they were asked to complete by utilizing the mural tool and communicating amongst each other through Microsoft teams. This workshop lasted approximately 4 hours, and the topic of breaks were left to the individual groups.

The workshop was separated into two groups tasked with describing the e-commerce market. Group one elected a leader whom they seemed to know, whilst group two elected a secretary amongst the observers. An assumption was made that the trend towards sustainable development regarding e-commerce, focusing on change in policies and regulations, particularly regarding transport, would affect the e-commerce market in the coming years. It was noted at this point that the participants were not referring to the market at this point (Minutes of meeting section 2, part 2). Another example is the issue of shipping and logistics, which the project facilitator suggests could be aimed towards sustainability and climate issues and how to solve these complicated issues through collaboration. This angling could attract firms that are focused on the green shift (Project facilitator, 2021, section 3).

The emergence of a more circular economy caused a stir during the workshop. The firms posed a theory where in the future, the question of whom created the product would be of greater importance than the product itself due to social perceptions and focus on sustainability. Due to the increased usage of the internet to seek knowledge and the emergence of sites such as Trustpilot and Prisjakt, transparency has already increased in regard to pricing, customer service and brand trustworthiness. The theory proposed during the workshop was that social media already has increased the requirements and awareness of end-users regarding sustainability and social responsibility (Minutes of meeting, section 4).

The workshop participants were asked to discuss and write their perception of disruptive signals and disruptive actors within the e-commerce sector.

Confusion regarding the distinction between a disruptive signal and actor was observed in both groups. The participants found it difficult to separate the disruptive signals from actors, as they found that some actors propose disruptive signals by their existence. A prominent example of this was Amazon who holds a tremendous global market share within e-commerce products. Different rules regarding subsidies on freight were mentioned as a disruptive signal because it gives different rules to firms depending on the country they operate within. The Gamestop incident was brought up as an example of a disruptive signal since social networks and societies can become disruptive (Minutes of meeting, section 5).

The second task given to the two groups was to present an ideal situation wherein the cluster project had established itself and become a renowned cluster and thus ended up on the front page of a newspaper. They were asked to present their ideal outcome of the cluster project and decide which newspaper to be written about in theory. Group 1 was initially very focused on the Kristiansand region being the gathering point of e-commerce in Norway, as well as more firms and competence being drawn towards Southern Norway. Recently a lot of focus has been given to the new battery factories which will be built there. The participants, however, wished for e-commerce to create attention and workplaces for southern Norway as well. Interestingly, group 1 were initially very focused on the geographical aspects of southern Norway, including area, society, and nature.

The last task given to the groups by Innovation Norway was a continuation of the first two tasks. They were asked to discuss what preconditions had to be established to realise the ideal situation presented in task 2 and respond to the challenges and opportunities presented in the initial task. The conversation speed was, at this point, noticeably faster paced than in the previous tasks. This could be attributed to the task being more significant in terms of points the participants were asked to address. Firstly, they were asked to reaffirm their ambitions. Both groups were focused on increasing the visibility of Southern Norway and being “The place to be” for employees and employers. Secondly, they were asked to assess what their most important contribution would be. The participants discussed a desire to become a platform for sharing experience- and knowledge. They were also very focused on partnering with the universities and promoting members of the potential cluster externally and internally. The example given was the e-commerce environment and the media. Diversity in competence,

knowledge and in general was seen as an ideal contribution (Minutes of meeting section 7-8). Lastly, the participants were asked to discuss what commitments were required to realise their ambitions. The participants focused a lot on each firm carrying their own weight, participating in competence and knowledge development, and sharing it. Regarding structure, the participants noted a need to secure the network on a management level (Minutes of meeting, section 8).

## 4.2 Observations

This section presents indirect observations, such as the tonality of the participants' voices, the conversational speed, the number of participants participating in tasks and other observations about how the proceedings were perceived. While objectivity would be ideal, it is acknowledged that some level of interpretation and analysis on the researcher's part takes place. It is important to acknowledge the current pandemic situation, as it was perceived as a very prominent and apparent disruptive signal to the members of the cluster project. However, as it was deemed impossible to distinguish the effects of the pandemic from how the cluster project would otherwise commence naturally, it was decided that the point of external shock would be excluded as a point of analysis. However, it is a vital facet to keep in mind when taking the findings into as it undoubtedly has affected the proceedings of the cluster initiative.

During the first task, the participants sat mostly still with their microphones muted. Some participants voice confusion related to the task given by Norwegian Innovation Clusters. It was unclear how many of the participants were actively engaged, but it appeared that a few were more reserved than others. This was reflected by very few participants speaking during the breakout rooms. Primarily, the leader would discuss what they should do whilst one of the participants answered with short answers. The respondents wrote their answers individually and mostly in silence. At times, a participant would explain their point of view, which would enlist responses such as nodding. The participants referred to each other by the names written on their profiles but judging by the way their faces looked fixed at the screen combined with the hesitation in the voices whilst referring to each other, it seemed like most participants were not familiar or had prior relationships. This was made apparent by several respondents re-affirming who was talking at what point and affirming if they pronounced names correctly. The only apparent exception to this was the project facilitator, which all participants seemed at least somewhat familiar with (Minutes of meeting, section 9). This was observed through several mentions towards them, and the observation of other participants smiling, laughing, and replying eagerly when the project facilitator spoke. In addition, it was directly observed that

some respondents complimented the project facilitator for their professionalism, and by adding that they would like “someone like them” to be their future cluster-leader after it was established that they were not currently enlisted as such.

The cooperation between the participants was noticeably more efficient and friendly at this point. The participants were more actively engaged in conversation and requested the word more frequently. At this point, some participants started actively responding to each other rather than answering in unison rather than each individual writing their answer in silence. In addition, the body language of the participants seemed more relaxed, as perceived by smiles and laughter.

However, the participants still became somewhat quiet after sharing their perspectives. This task seemed more complex than the last task because more time was spent discussing and organizing what to do at the breakout room’s start (Minutes of meeting, section 10).

### 4.3 Cluster rationale

This section is related to the expert opinions and their understanding of how the engineering of a cluster project that does not pertain to a specific industry relates to existing theories regarding clusters and their logic. One of the more pressing questions was the rationale behind participating in a cluster that was not focused on common or synergistic industries.

Porter defined clusters as value chains wherein the firm is interconnected. If they are not interconnected through a common or synergistic industry or products, there must exist something that connects them elsewhere (Respondent B, 2021, section 1). Respondent A noted that shock-digitalization and increased access to the internet means that more people can utilize digital forms of communication more efficiently. He proposes all forms of cooperation could take advantage of this fact. He continued by adding that due to the covid pandemic, this development has forced digital meetings as a staple (Respondant A, 2021, section 1).

While the firms might not share a commonality in being in the same industry, there is a clear commonality regarding the competence they have amassed. Respondent C noted that this commonality is perhaps more so directly related to their e-commerce competence. They regarded areas such as logistics, digital marketing, and handling of user-related data as some competencies that could promote the logic for clustering to be meaningful. All clusters revolve around some form of value-added, “together the pieces are worth more than individually” (Respondent C, 2021, section 1). They also added that there needs to be some interaction with society to find out what is meaningful from a societal perspective. This notion was reaffirmed

by Respondent D, who proposed that the importance of sustainability and renewability is a social pressure that has been established in recent years.

Regardless of type, the rationale for clustering seems to be that the cluster enables single firms to do something they otherwise could not, something valuable outside their usual value chain. Using the idea of negotiating better logistics deals, for example, Respondent C regards this as a business advantage rather than a cluster advantage; it does not necessarily require the emergence of a cluster. In practice, the reason that it is common to mix business interests with cluster collaborations interests. An example is given with the Node cluster negotiating politically towards the logistics industry. Still, the competence they have developed within wind energy offshore is something a single firm could not accomplish on its own (Respondent C, 2021, section 1). Geographical co-location is what enables firms to utilize the same labour market, and the knowledge floats between firms through it as well as joint suppliers. If the firms are not co-located, they cannot gain advantages from this type of complementarity. The rationale is that co-located firms generate a skilled workforce in their functional region. With a greater distance between the firms, Respondent B proposes that some of these upgrading mechanisms will be lost. Respondent D added to this point by noting that the positive externalities co-located, and sub sectoral heterogeneity is essential for productivity growth (Respondent D, 2021, section 1).

#### 4.4 On the “engineering” of cluster projects

This section revolves around the question of engineering clusters and the difficulties and opportunities they may include. The project facilitator explains that everything is intrinsically connected to commitment and external financing regarding the progress of the cluster project and who should contribute. They had another meeting with Norwegian Innovation clusters the day after the workshop, which provided a few important clarifications regarding that. Currently, they are working on a new project plan considering these clarifications, which focus on creating the collaborative baseline. This baseline could possibly be supported by Agder county (Project Facilitator, 2021, section 7). Some aspects are still unclear, which they aim to come to agreements on during the summer. These aspects are related to planning, project leadership, member fees, commitment, levels of ambition and more. The plan is to go forwards with a more formalised collaboration in August (Project Facilitator, 2021, section 7).

It is clear from the observations and interview with the project facilitator that the initiator of the cluster project is Kristiansand Business Region. The project facilitator adds that this project is

one of many projects they are involved in and that it is desirable to hire someone with full responsibility for managing and facilitating the cluster project. They add that Kristiansand Business region would like a fully dedicated project leader to commit their full focus and attention to the project (Project Facilitator, 2021, section 7).

Regarding organic versus engineered clusters, Respondent A added that organic clusters have “the proof in the pudding”. They have survived and sustained themselves, thus, survivability is probably higher than that of engineered clusters, which will sometimes flourish and sometimes not. He adds the importance of being prepared when “engineering” clusters. It will be very apparent if the project or plan succeeds or not (A, 2021, section 2). Respondent B supplied this point by adding that most cluster theory is written about organic clusters. He adds that the idea of engineering clusters through cluster projects and supporting programmes partly results from how Norway has evolved to become cluster centric.

On the topic of engineering clusters, Respondent A added that this enables more control over the factors required to succeed explicitly compared to organic clusters. Since we have a lot of knowledge and theories about how clusters work, it seems foolish to sit and wait for something to happen “naturally” rather than using the many tools available to us (A, 2021, section 2). The cluster project facilitator added that he also found that many clusters are established due to desperation. They must co-create to solve some common problem or simply are stronger together. Regarding firms’ difficulties during the pandemic, he adds that most e-commerce firms tend to be better off than their traditional counterparts. (Project facilitator, 2021, section 10).

#### 4.5 Proximity

This section presents the findings related to how proximity within cluster projects and emerging clusters was perceived by the project facilitator and the expert opinions. Respondent C explains that some time ago, whilst the Eyde-cluster was still in the project phase, they reported that efficient collaboration between the directors of the firms meant the collaboration was efficient. However, they struggled with the cooperation within the cluster, unable to perceive why. Societal changes regarding the political acknowledgement of the importance of clusters took place, with sustainability as a driving factor. This caused the members of the Eyde project to take drastic changes due to experiencing a communal challenge and opportunity, which caused the collaboration within the cluster to blossom. They understood that all the cluster members



had to collaborate and exchange information; it was inadequate with the cooperation between the directors (Respondent C, 2021, section 3).

So, the logic behind this is that there needs to be an urgency present in the actors within a cluster project for a sustainable cluster to emerge. They propose that initially, there was probably a lot of mistrust between the actors within NODE, for example, as they initially competed with one another. Trust is built during collaboration and cooperation, there has to be adequate proximity for the cluster project to take off. Still, proximity can be regarded as a result as well as a prerequisite for collaboration (Respondent C, 2021, section 3). Commitment was a major topic during the interview with the cluster Facilitator. He noted that the pre-project ended up lasting a lot longer than expected, and one of their aims during this time has been to establish commitment agreements with firms concerning the project, for example, regarding establishing a contingent membership fee model (Project facilitator, 2021, section 7).

Regarding the request for financial support to Innovation Norway, they focused on the firms having a common aim or challenge as a requirement for fulfilment. In a meeting conducted between them and Kristiansand Business region, they seemed to find this aspect lacking, according to the Project facilitator. He added that the cluster project, from their perspective, was more oriented towards general knowledge and competence development and cooperation regarding e-commerce and indeed making the whole e-commerce market stronger as a whole, not only within the Kristiansand region. However, this did not fit with expectations regarding focusing firms on a common market challenge (Project facilitator, 2021, section 1). Concerning management of the cluster project, the transition from Kristiansand Business region to the firms taking over the organization has not taken place, which is a challenge for them. They are currently perceived as initiators of the cluster project, which they are presently working with Innovation Norway to address. They wish to create more ownership of the problem amongst the member firms (Project facilitator, 2021, section 2). As the situation stands, the cluster project is unable to apply for corporate network funds. However, they are currently collaborating on readjusting the plans and applying for funds from the Agder county whilst focusing on creating a common collaboration platform as a basis for the cluster project. The platform aims to be a centre for “competence development, company visits, courses, and seminars for everyone who wishes to take part in the collaboration” (Project facilitator, 2021, section 3).

The project facilitator adds that a potential common issue for the firms could be the threat posed by Amazon. They note that the cluster project requires a sound strategy regarding how to deal with threats such as disruptive signals. This could be a potential subproject which actors could be attracted towards, how to use the sum of their competence and expertise to meet the challenge posed by firms like Amazon in a good way (Project facilitator, 2021, section 10). The project facilitator adds that the creation of a collaborative platform was the aim of the cluster project initially. They wished to focus on collaboration and relation-building and thus to build the network from that point forward (Project facilitator, 2021, section 3).

Respondent D refers to the regional memory and path dependency and adds that the regional innovation system in Stavanger is characterized by a lot of strong bonds, and in their perspective, embeddedness. In contrast, Bergen is more flexible, which allows for path renewal to be easier. Respondent A adds a potential sixth dimension in “emotional proximity” as a part of social proximity, which refers to the experience of having the same difficulties as others which they regard as an important factor. They add that the first thing firms that consider joining clusters will be interested in knowing is what benefit or knowledge they can gain from joining a cluster, and this is a proximity dimension which he proposes is tested very early in a cluster project’s cycle (A, 2021, Section 3). They also point out the importance of not relying too much on solid bonds since this could lead to lock-in due to the failure to develop weak ties, which could bring new opportunities. There could be a risk of focusing too much on incremental innovation internally. The problem arises if some external force, such as a firm, changes the rules of the game (Respondent A, 2021, section 4).

Respondent C proposed that institutional proximity is perhaps the most crucial dimension regarding cluster projects. They argue that institutional proximity builds trust, which bridges the different actors and allows collaboration to take place. They note that embeddedness is probably not a threat in a cluster project but also very difficult to deal with once it has taken place, especially social embeddedness. A problem is if the cluster becomes too structured, as this can hinder collaboration and the establishment of a common purpose. They note that the importance of a joint purpose cannot be understated as it creates movement and a shared vision within networks. Concerning geographical proximity, they continue by adding that less geographical proximity may make a good mix between local buzz and extra local linkages and thus a potentially more significant degree of input and a reduced possibility for inertia. However, a problem primarily related to digital communication is the lack of face-to-face interactions, which may cause relation-building to decrease (Respondent D, section 3).

#### 4.6 Heterogeneity and weak ties

Respondent A theorises that e-commerce clusters, in particular, will be “more exposed to weak ties due to being digital and thus having to adjust to global tendencies and trends” (Respondent A, 2021, Section 4). As such, they must pay attention to what happens to keep up with firms all over the globe, and as such, they must pay attention to the discourse about weak ties happening in academia. They suggest that this will be much more pressing for e-commerce-based clusters. But simultaneously, they do not have to look for a distant contact to take advantage of the opportunities weak ties may bring, like one had to do in the past (Respondent A, 2021, section 2).

It could be essential to seek digital areas of interaction for a cluster that is not co-located to strengthen relational ties, as these are required to access socially embedded knowledge within networks (Respondent D, 2021, section 4). Innovation occurs where differences in opinions are tied, and the weak ties challenge existing chains of thought. Networks can become locked in their way of doing things, and as such, diversity and heterogeneity is a baseline for cluster development. They have to be diverse regarding the actors involved, but it also requires a common modus operandi (Respondent D, 2021, section 6). Respondent A ends by noting that “All theories are sometimes true theories”; some theories are correct in certain contexts. Strong ties may be profitable in a prosperous country, whilst weak ties may be essential in a more impoverished country. It depends on the setting and structure operating within (Respondent A, 2021, section b).

Weak ties are likely favourable in certain phases of cluster projects as well as life cycles. There is, however, a tendency towards the emergence of strong ties and homogeneity in networks and clusters. A cluster will always have an internal core of insiders, which is unlikely to change. In well-established collaborative projects, you often must have this internal core in addition to an inflow of weak ties (Respondent C, 2021, section 4).

#### 4.7 Communicative rationality

This chapter focused on the respondents’ views on the importance of establishing communicative rationality in cluster projects and the implications this could have for cluster projects. Before covid restrictions, they were in contact with 30-40 firms that showed interest in the project, and they continued dialogue through e-mail. However, in general, there has been

less communication than what they had hoped for. They note that the pre-project has been delayed by approximately half a year, in part due to covid (Project Facilitator, 2021, section 6).

When discussing communication, the project facilitator noted that most communication between the actors in the project has gone through mail and a Facebook group, which was added in February. This is an informal channel used for everyday communication and collaboration between the firms. He adds, however, that they have been hurt by the Covid-restrictions, particularly concerning physical interaction among the firms and more direct forms of communications. The initial plan was to attract more actors through these physical meetings, as well as the development of social relations amongst the members of the project (Project Facilitator, 2021, section 6). Respondent D pointed out that they expected it to be more challenging to build relations and trust within a cluster project based on e-commerce due to not being co-located, especially if a lot of interactions were facilitated digitally (Respondent D, section 3).

The inclusion perspective is important in the establishing phase of a cluster project. This revolves around allowing people to be heard and that the argument takes precedent. The cluster project must establish certain structures related to how they will cooperate, communicate, and work together. But before that, it is imperative that they have an agreed-upon vision. This is related to roles, expectations, and responsibility (Respondent D, 2021, section 5).

Respondent A notes that firms must have some form of communicative rationality because they survive through cooperation to begin with. He suggests that communicative rationality is, in a way, part of the business idea. On a secondary level, clusters require communicative rationality internally during the establishment of the cluster. One thing is practising communicative rationality as a firm. Doing so as a cluster is another beast entirely, and that is not necessarily transferable. In the case of clusters, the rules and structures are entirely different. If we consider North, where the institutions are the rules of the game, I believe one must start all over in a sense (Respondent A, 2021, section 1).

Communicative rationality requires openness to new questions and dialogue, there needs to be an interdependency and autonomy established within the functions of the cluster project. This relates to reducing positions of powers in order to enable autonomy, however this requires the right culture, the right actors and a consciousness about the power structures within the cluster project and awareness of these (Respondent C, 2021, section 5).

*Table 1 – Expert opinions summarized.*

<b>Primary question</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
<b>Research question 1</b> How do you think cluster theories relate to cluster projects and the case?	Digitalization has become the norm. Co-location not important.	Firms in industries interconnected. RIS perspective important. Requires complementarity.	Differs between business interests and cluster benefits. E-commerce is a competence, thus complementarity.	Co-location important, but current development towards digital alternatives.
<b>Research question 2</b> What are the implications of engineering clusters?	Possible and important, policy enables it.	Organic is the norm, but Norwegian policies makes engineering possible.	Norwegian RIS-perspective enables engineering.	Building relations is important when engineering clusters. Ownership to the cluster crucial.
<b>Research question 3:</b> What are your thoughts regarding the proximity term in relation to a cluster project?	All dimensions essential except geographical, can be compensated for by other dimensions. Provides a vision-based proximity term.	Cognitive dimension critical to compensate for lack of co-location.	Requires that all members of the firm communicate. Clustering requires urgency from the actors. Trust is crucial.	Institutional and social proximity essential, bridging trust, relational ties that enable growth.
<b>Research question 4</b> What are your thoughts regarding the embeddedness literature and the strength of weak ties in a cluster project?	Weak ties part of the business model, requires strong ties as a basis.	Strong ties required for cooperation and innovation over long times. Weak ties novel information.	Weak ties are essential in some phases; however, clusters lean towards strong ties, essential for trust and access to tacit knowledge.	Strong ties are the norm in clusters. Tendency towards closed systems.
<b>Research question 5</b>	Need to establish common rules,	No such thing as a recipe for communicative	Important to develop, but difficult to do in	The inclusion perspective is important.

What are your thoughts about the establishment of communicative rationality and social action in a cluster project?	language: necessary for any cooperation but hard to transfer.	rationality. Requires interaction, workshops, courses. Collaboration.	practice. Open dialogue, create dependency, autonomy in functions. Requires the right culture, people, structure consciousness and facilitation.	Argument trumps individuals. Vision required, agreement on what discourse is.
<b>Research question 6</b> What are your thoughts around the topics of heterogeneity and diversity in relation to cluster projects?	Relates to the strength of weak ties. Necessary for innovation.	Clusters: lower heterogeneity, but cluster projects such as this may have high homogeneity. Homogeneity suggested as required too “mature”.	Too homogenous: lock-in and closed systems. Heterogeneity enables creativity and novelty. Diversity requires trust. Generic dualism.	Innovation takes place where different knowledge meets.  Weak ties need to “challenge” the status quo.

## 5. Analysis

This chapter is divided through the same logic as the interview guide and latter part of the findings chapter as it ties together the theoretical framework and empirical data in an attempt at answering the hypothesis of this thesis, “Cluster projects require the establishment of communicative rationality to evolve into an emerging cluster.”.

Firstly, the overarching topic regarding the transferability of cluster theories and the complexities of engineering an e-commerce-based cluster will be discussed. Secondly, the proximity perspective and how it relates to innovation will be utilized in conjunction with the topic of communicative rationality. Thirdly the perspective of innovation through weak ties and heterogeneity will be discussed. Lastly, we will discuss how communicative rationality relates to the case and why it is important to establish communicative rationality in cluster projects.

### 5.1 The transferability of cluster-related theories

This chapter explores the transferability of the cluster-related theories towards untraditional cluster projects and emerging clusters. One of the most pressing and challenging observations made during the development of the theoretical framework was the lack of theories related to cluster projects and how they develop into emerging clusters.

Porter's definition of clusters poses a problem when regarding the possibility of the transferability of his theory. It also raises the question of the likelihood of the emergence of non-co-located clusters from the first sentence of the definition. One reason behind this perspective is likely because these theories were written at a time where effective digital collaboration and communication were not established in society at large. The rapid digitalisation that is taking place in society has vastly increased how communication is enabled. Newer research into clusters has become less reliant on this factor, such as Boschma and Isaksen, although these still press the advantages of some level of co-location. Digitalisation and internet usage have undoubtedly accelerated at an even greater pace due to the global pandemic, which the participants of the cluster project observed through increased online sales and online presence. This has caused a form of shock-digitalisation to occur globally due to the limitations on physical contact between individuals. This shock-digitalisation has been observed in three main ways by the e-commerce firms in the cluster project:

Firstly, they have experienced an increase in sales through online sources observed statistically and through increased revenue. Secondly, new customer segments have started utilising their online stores, particularly older individuals who were less commonly seen before the shock-digitalization caused by covid. Thirdly, the firms observed that customers have become more selective and informed regarding their purchases. It is difficult to pinpoint what the cause of this could be. Still, in likelihood, it is a combination of increased transparency, as the firms suggested, and a societal change towards increased awareness, social sustainability, and renewability, as suggested by Respondent D. The cluster-related theories of the future will likely take note of these changes since collaboration through digital platforms has become the norm during the pandemic. It is important to concur that this thesis does not seek to glorify or simplify the effects this shock-digitalization can have on cluster projects and clusters. Digital cooperation can not necessarily replace physical interaction and the sharing of tacit knowledge. The implications on digital modes of communication will be discussed in the proximity chapter below.

Secondly, the theories respondents added that most clusters are based around one or several related industries. This was the second issue that emerged concerning cluster theories and their relation to the extreme case. However, as Respondent B mentioned, there are some very successful cross-industry clusters, as exemplified by iKuben, whose commonality is related to digitalisation and knowledge development, amongst others. Doeringer and Terkla noticed this industry-centricity as early as 1995 and noted that defining clusters by their related industry is



neglectful. The respondents aligned with this perspective, as they argued that e-commerce has its own distinct problems and opportunities, which can likely draw the advantages of cluster collaboration. Nevertheless, this subject has received relatively little attention in the cluster literature. This is possibly due to newer theories, including related and synergistic industries in their models.

One reason why this extreme cluster project has emerged in southern Norway could be the regional path development- the region's history. E-commerce has seen tremendous success, as noted by the e-commerce firms during the Workshop. This could mean that there exists a history within the region that supports the idea that further development of e-commerce related firms and competencies should be encouraged and supported (Trippel et al 2015). It can be argued that the shift towards a focus on e-clusters in itself is an attempt at path renewal which we are just starting to see the result of. Based on the idea that path development is based upon historical regional preconditions such as existing firms and the knowledge within them, this is plausible.

#### 5.1.2 Facilitation

There seems to be uncertainty amongst the participants concerning the leadership structure. This was particularly apparent when representatives from Norwegian innovation clusters brought up the topic of cluster leadership. Several firm representatives indicated that they perceived the project facilitator as their current leader figure. The project facilitator immediately distanced themselves from this and added that that was not the intent. It was apparent that the members viewed the project facilitator with some level of respect and trust, as their requirements for a cluster leader expressed were very extensive and thought out. However, there seems to be confusion and misunderstanding concerning the project-facilitators role in the cluster project. This is arguably because they have been the main initiator in the process as well as the main point of interaction as indicated by the project facilitator and strengthened by the way the firm representatives interacted with them. Arguably, their role is more akin to that of a cluster facilitator as described by Ingstrup and Damgaard (2011). The findings revealed that they had taken an active part in organizing the project from the beginning and that they were the main point of contact for the firms involved in the project, as well as to third parties such as Norwegian innovation clusters. Secondly, it was found that the participants regard them with respect and at least some level of trust and familiarity, although further data would have to be collected to confirm. The project facilitator arguably upholds at least three of the core attributes of a cluster facilitator Argued by Ingstrup and Damgaard (2011). Which is professionalism

which was directly noted by the project members. Professionalism according to the ideal attribute's framework refers to being confident and acting with integrity and professionalism. Secondly, the attribute related to humility was arguably observed during the workshop and interview by the facilitator actively avoiding the enforcement of their beliefs unto the interviewer and the participants. Thirdly, it is argued that the attribute of awareness was shown when asked about their leadership role during the workshop and interview. The facilitator seemed very aware of their role as a facilitator and showed a focus on the planning and development of the cluster. There is not enough data to comment on the attributes of sincerity and flexibility. However, the findings suggest that the facilitator inhabits the attributes of professionalism, awareness, and humility. Since the case refers to a cluster project it was tempting to assume that the facilitator assumes this role, however as the evidence provides no conclusive proof this cannot be confirmed. The reason why they are being referred to as a "project facilitator" reflects the cluster project nature of the thesis, and not evidence in accordance with Ingstrup and Damgaards theorem. This was simply done to avoid the confusion of referring to them as a manager, or project leader as this is not the case based on the findings. There is not enough decisive evidence to confirm if the facilitator is a framework or project facilitator. Based on their own perception of a facilitator-like role, and the level of trust and positive response they solicited from the respondents, it seems safe to at least assume that their role is akin to that of a cluster facilitator (Ingstrup & Damgaard, 2011).

However, the role of a cluster facilitator is not static, and the project facilitator expressed a desire for the firms to take a more active part in the cluster project and for the establishment of a cluster leader to take place. This point relates to Respondent D's point of establishing ownership of the cluster as important in cluster development. The firms and the project facilitator argued that one of the main objectives after the workshop was to establish a communication and knowledge development platform. However, this would arguably require some level of communicative rationality to be established between the actors of the cluster project.

## 5.2 The dimensions of proximity in cluster projects

This section argues why proximity is a requirement for cluster development and innovation. The five dimensions of proximity and the balancing of these are related to a firm's capacity for innovation (Boschma 2005). But while Boschma stresses the importance of balance in all five

dimensions, this chapter argues that as an extreme case and as a cluster project, some dimensions may be of greater importance to establish. Innovation and learning are necessary to provide long-term sustainability and growth (Asheim, Isaksen, Trippl, 2019 & Boschma 2005). And Boschma argues that a balance, meaning not too much and not too little proximity in his five dimensions, creates ideal grounds for learning and innovation to emerge and be sustained in organisations.

As such, the focus on growth and sustainability is arguably important in cluster projects aiming to become established clusters. Boschma notes that interactive learning can occur despite a lack of geographical proximity if there is ample institutional geography and cognitive proximity, seeing as geographical proximity is an amplifier and not a requirement for interactive learning. Institutional proximity relates to precise tasks and a central authority that sets and observes these. Enough cognitive proximity relates to the establishment of clarity between the economic actors involved in collaboration (Boschma 2005). Firstly, Boschma added that institutional proximity in this regard requires some form of “centralised authority”, which in the case of a cluster may relate to a cluster manager or a cluster facilitator. However, as the project facilitator and the participants of the workshop noted a need for a clear leader and clear plans in the future, this is something which should be addressed if the cluster project is to increase the institutional proximity and, as such, create trust based on commonly held and understood institutions within the cluster project. The establishment of institutional proximity is argued to increase the possibility of interactive learning and reduces the chance of opportunity (Boschma 2005).

There seems to be synergy between Boschma’s dimension of social proximity and Granovetter (1973) focus on embeddedness in social relations. Boschma noted that the social proximity dimension was based on the embeddedness literature, even directly citing Granovetter’s work. As such, there is arguably a direct link between the perspectives of embeddedness noted by Boschma and Granovetter. Embeddedness causes a reduced capacity to innovate. However, embeddedness also enables the creation of trust and, thus, sharing of tacit knowledge. Both Boschma and Gilsing et al. focus heavily on establishing a balancing act of redundant and non-redundant ties (Boschma 2005, Gilsing et al 2007). Boschma regards social proximity as a possible requirement for learning and innovation in general, which is perhaps more pressing than the topic of interactive learning. Boschma specifically argues towards a balancing act between establishing socially distant market relations and the establishment of embedded relationships which are purposefully socially embedded. He adds that this balancing act may

enable trust and commitment to be established whilst simultaneously avoiding the issues of reduced innovative performance (Boschma, 2005).

However, this thesis argues that before the notion of novel information and innovation can be considered, a strong social context must be established. The findings indicated that there was little to no pre-existing relationships between most of the participants. As such, it could be the case that the establishment of strong ties are of greater importance to the cluster project than attempting to establish socially distant ties, seeing as currently, the cluster project consists of mostly socially distant social relations. The problems related to over-embeddedness are not likely to present themselves in the cluster project as a result. In addition, it was also noted that social proximity reduces cognitive distance due to commitment between individuals and increased understanding between them (Boschma, 2005). It is argued that institutional proximity has to be established in order to create a clear path forward and for the actors to develop some form of commonly held institutions that reduces misunderstandings and knowledge gaps between participants.

It could be argued that in a cluster project, the cognitive dimension might be essential to establish as a basis for collaboration through the exchange of knowledge. This may particularly be the case in regard to firms that do not have a high degree of geographical proximity. This thesis agrees with Boschmas argument that cognitive proximity may compensate for less geographic proximity. And as such, it may be especially important for clusters that operate or plan to operate across large geographic distances. This was a point argued heavily by Respondent A, who also noted the importance of institutional proximity but emphasised the former. If we believe Boschma's argument on interactive learning in the case of less geographical proximity, perhaps it could also be argued that it is increasingly vital for all organisations to emphasise establishing the same rationale in the current pandemic. Boschma noted that the positive externalities of being geographically co-located, that is, regarding the sharing of tacit knowledge, could be obtained even if not permanently co-located. This is arguably the case when actors who previously interacted physically weekly now have to use digital solutions as much as possible to reduce the spread of covid. As such, perhaps several firms and clusters should look towards institutional and cognitive proximity to minimise the implications of less geographical proximity. However, as was noted during the findings, respondents a and d noted the importance of short physical interactions. Especially regarding building relationships and the establishment of trust, it should not be underestimated. This brings us to the second important implication brought by Boscma, the importance of proximity

in the social spheres of social and institutional proximity. Boschma adds that social proximity is required for learning and innovation to occur in general, not only interactive learning, which he proposes is the case for cognitive and organizational proximity. As such, social and institutional proximity may be a more significant issue regarding the case study. The findings related to relational strength suggested that the cluster project currently consists of mainly weak ties. In addition, it was argued that there is currently a lack of commonly held values and visions within the cluster project.

Respondent A suggested a sixth dimension based on a mutual vision, threat, or opportunity, and noted that this is necessary to enable cluster emergence. In addition, they hypothesized that this vision proximity is tested early in a cluster's lifecycle. This thesis argues that the development of a common vision, problem and opportunity requires the establishment of communicative rationality. However, the topics of relational strength and heterogeneity is argued first.

### 5.3 Weak ties and heterogeneity in cluster projects

This section explains how the advantages of weak and strong relational ties relate to cluster projects. It is proposed that strong ties and heterogeneity are essential for generating trust and accessing socially embedded knowledge. Secondly, the idea that weak ties and homogeneity pose an important source of innovation is discussed.

While Granovetter's primary input was the idea of the strength of weak ties, it does seem like he agrees in line with Boschma concerning the positive aspects of proximity. Granovetter notes that firms benefit from trust and positive social relations through strong ties. The problem arises when these relations become too embedded, or over-embedded, as Granovetter puts it. Over-embeddedness leads to Lock-in in Granovetter's opinion, because it leads to reduced innovation capacity through firms choosing not to change their existing routines and ways of production, or by a tendency to seek internal knowledge rather than looking towards external sources and thus not encountering a more varied set of ideas and possibilities. Respondent A added that because the members of the cluster project have to compete with international competitors, the strength of weak ties is even more pressing compared to local shops, which usually compete within the same area.

On the other hand, it seems plausible that engineered cluster projects, especially those with members from more considerable geographical distances, are most likely to consist of primarily weak ties because of the project's infancy and the unlikelihood of existing relations. The empirical data seemed to suggest that this was the case during the workshop, and conversations with the project facilitator partly confirmed this. If we are to believe

Granovetter argued that weak ties are particularly important to marketers because they provide access to a more extensive set of unique connections, thus potential profits. However, in a developing cluster project, perhaps strong ties are of greater importance. Whilst weak ties may enable innovation through new perspectives and knowledge, there arguably needs to exist some supporting social structure to utilise it. During the cluster project, it may be of greater importance to establish a strong social system capable of transforming ideas into tacit knowledge.

Since it is argued that the theory of weak ties is related to accessing new knowledge and ideas, as well as new networks and individuals, one could draw a parallel towards the theories related to heterogeneity, such as proposed by Menzel and Fornahl (2010). They relate heterogeneity to knowledge variety, innovation and thus cluster renewal. Granovetter also argues that as relations become strong, and especially with increased time spent, individuals become more similar, directly correlating with the homogeneity term. When following this line of thinking, one could argue that a high degree of homogeneity within firms is likely to correlate to a high degree of strong ties within the firm.

While it is likely that a combination of both is ideal, I agree with Respondent C that the importance of both likely varies with the stage of cluster project development and cluster development. For example, Menzel and Fornahl (2010) argue that heterogeneity within a cluster is a prerequisite for path renewal. They also add that some sort of technological similarity is required as a prerequisite for a cluster to be established. This resonates with the earlier argument related to proximity wherein it was hypothesised that the case cluster should focus on strengthening the dimensions of proximity, especially regarding social and institutional proximity as a basis for collaboration, learning and innovation.

Whilst it was found that weak ties are important for facilitating and developing novel knowledge and innovation, the findings and theoretical analysis also revealed the importance of strong ties as a basis for trust. Boschma specifically noted that strong ties are required to share complex knowledge, because feedback is necessary (Boschma, 2005). As such, it is

arguably essential to establish proximity in the social and institutional dimensions as well. This argument aligns with the argument of the necessity to increase the cognitive and organizational proximity within the cluster project to establish a common language, and clear structures and rules, respectively. Secondly, it is arguably also critical to increase the social and institutional proximity within the cluster project, and as such increase the strong ties so the sharing of tacit knowledge is enabled, and perhaps more importantly a trust-based work environment. The concern of establishing a common vision was brought up by the participants of the workshop, representatives from the Norwegian innovation clusters, the project facilitator, as well as the experts' opinions. However, this thesis argues that the reasoning behind a lack of a common vision may relate to an overarching lack of communicative rationality within the cluster.

#### 5.4 Communicative Rationality in cluster projects

In this section, it is argued that the project cluster lacks fundamental communicative rationality, which will have negative implications for the development into an emerging cluster. Communicative rationality can be understood as collective understanding, which leads to social action and change within society, networks or simply between individuals. The project members expressed a desire to create a mutual vision and arena for knowledge development and sharing. They wish to change or develop the cluster's framework to become a functioning cluster in time. The actors in the cluster project must create a shared understanding of what values and principles the cluster will build upon, a process which I argue was partly started during the workshop, but which has yet to successfully create the ideal discourse idealised by Habermas.

Firstly, a shared vision has yet to be established, which in turn has implications for the cluster project, particularly regarding how to move forwards. Habermas would argue that it is the co-creation between the actors within clusters that leads to change within the framework, and thus, the knowledge development. In order to make communicative rationality a possibility, they have to agree on how they will define the collaboration, or rather the cluster itself. I suggest that in accordance with Habermasian theory, they should consider moving away from individualistic sentiments shown during the workshop and focus on creating dialogue as proposed by Habermas. This would require some standard rules and an agreement on how to go ahead with the cluster planning to be established. Thus, they need to move towards cooperation across all participants of the cluster project. Being individualistic in the context of

collaboration creates barriers for coordination and social action. They must generate some consensus on where they are, where they are going and how to get there. This was partly attempted during the workshop when Innovation Norway raised the topic of an ideal situation. However, the result of that was a vision of an ideal result and not how to get there. Firstly, a platform needs to be established in lieu of the restrictions on meeting physically, which also coincides with the digital nature of the cluster.

During the workshop, it was apparent that there were many different opinions regarding the cluster's ideal vision. Before commitment can be established, it might be necessary to set a concrete goal, which all participants agreed upon. However, it can be argued that the prerequisites for accomplishing this may be lacking. The reasoning is that the current level of dialogue may be unsatisfactory to create social action. This argument was established whilst observing their interactions during the workshop and furthered by the project facilitator adding that most communication happens through e-mail. It does not fulfil Habermasian theory of ideal dialogue, as it was hierarchical in that each group was assigned a leader who took control and had the final say. Secondly, there was little to no actual dialogue observed. That is, back and forth conversation between the actors to come to a mutual understanding. Instead, the participants responded to the tasks as – tasks. As such, the rationale observed seemed more in line with writing as many “good” perspectives as possible, rather than discussing them amongst each other. Creating mutual understanding is a core in Habermasian theory which arguably was not fulfilled. If we relate this to the social capital theory, it could be that there is a lack of social capital within the cluster, that is a lack of sympathy within the members of the cluster project. Sympathy in this context relates to the members of the cluster projects sympathy which can provide some preferential treatment for other members of the project, beyond what is required and expected (Robinson et al 2002). Whilst this is a likelihood due to the observed lack of relational strength within the firms, this cannot be substantiated beyond assumptions. However, it is argued that there is a notable lack of cognitive proximity within the cluster project. Respondant c added that communicative rationality is all about facilitation of the right people, and the right culture wherein a focus on equality, autonomy, evaluation, and democracy needs to be established. This resonates with Habermas's ideal dialogue situation wherein autonomy, equality, free flow of speech and a common set of rules are established (Habermas 1988). As such, communicative rationality may require autonomy, avoiding power dynamics, establishing trust, a common set of relational rules, and enabling the equal sharing of ideas and



perspectives. In sum, it is argued that communicative rationality requires that the argument trumps individuals, no matter how they are situated within a social structure.

Furthermore, this thesis argues for a connection between the dimension of cognitive proximity and communicative rationality. Habermas stresses the importance of mutual understanding to create validity in dialogues. For mutual understanding to take place, the establishment of a common language must be established, a point which Habermas himself stresses (Habermas, 1988). This correlates with the dimension of cognitive proximity. Concerning the case, Boschma specifically added that cognitive proximity can reduce the effects of limited geographical proximity. Limited geographical proximity may hamper interactive learning due to spatial externalities, but a well-established common language and understanding between non-co located actors may compensate (Boschma 2005). This point was also supported by some of the expert opinions, who also added that this is probably strengthened by the increased efficiency and availability of options for digital communication. As such, it is suggested that the establishment of cognitive proximity is a requirement for communicative rationality within organizations and social networks.

## Conclusion

There are still many unknowns. However, the case highlights how existing cluster theories are limited in their transferability towards extreme cases illustrated by this thesis. Perhaps more surprisingly, it reveals a knowledge gap regarding cluster projects evolving into clusters. This thesis highlights how cluster theory tends to focus on established clusters. Secondly, it was found that cluster theories tend to focus on the ideas of industry homogeneity and geographical co-location as a core element. Whilst there is not enough data to further research the degree of heterogeneity and cluster facilitation, it is proposed that more research should be conducted in these areas, especially concerning cluster projects and emerging clusters.

While the data collected and analysed makes it challenging to draw a decisive conclusion, it reveals some interesting perspectives on how cluster projects can learn from existing cluster theories, especially related to the importance of establishing proximity and communicative rationality. The analysis suggests that clusters can be formed despite differences in geographical location and industries, based on newer cluster theories that focus less on geographical proximity and the benefits it may bring. The findings are based on expert opinions. The benefits discussed include social learning, knowledge development, and as a result, increased innovation capacity. This was illustrated through the arguments of Boschma (2005), Jürgen Habermas

(Johnsen 2016, Habermas, 1988) and Granovetter (1983). Some respondents argued towards proximity in the cognitive dimension and organisational dimension to compensate for a lack within geographical proximity, whilst others argued that social and institutional proximity is the most essential in order to create trust and a common vision. This thesis discusses both perspectives' importance and contends that the social dimensions may be of greater significance for cluster projects similar to the case, as the lack of a clear vision was observed. It was found that the problems regarding proximity and a balancing act in the social dimension are likely less important as it pertains to the case study, as the findings indicated that most relations could be considered weak ties or redundant ties (Granovetter 1983, Gisling et al. 2007). As such, the focus was shifted towards establishing communicative rationality.

Through the lens of communicative rationality and proximity in the cognitive dimension, the establishment of a common language, common rules and a commonly agreed-upon vision was discussed as prerequisites for cooperation and innovation. In conclusion, there seems to be some support for the hypothesis, which supposed that "Cluster projects require the establishment of communicative rationality to evolve into an emerging cluster." The rationale behind this is that any form of social action if we accept Habermas's theorem, must be built on communicative rationality. This is especially true when considering social action, which is supposed to result in lasting change, which the emergence of a cluster arguably can be considered. Communicative rationality is based on mutual understanding to establish validity between the actors. The establishment of this validity requires the actors involved to develop a common language and a set of rules and normative truths to enable understanding between all actors. Secondly, it requires that the parts involved are considered equal in that, all arguments need to be considered separately from the individuals themselves and be considered equal. In other words, arguments must take precedence over individuals.

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## Attachements

### **Interview guide** (English version)

#### **Introduction**

- Interviewer introduces herself as a master's student from the faculty of innovation and knowledge development.
- Briefly introduce the project. e-commerce-based cluster project initiated by Kristiansand Business region.

#### **Consent and information**

- No personal information will be retrieved or noted during the interview, and no recording will be taking place.
- The interview is estimated to take upwards of one hour per interview (60 minutes +/-)
- Reaffirm confirmation for participating as a respondent the possibility of retracting consent at any time.

This interview revolves around the transferability of cluster theories towards the development of a cluster project aimed at becoming an emerging cluster. The questions asked are formulated as open-ended, but with follow-up questions for certain topics indicated on the right of the model below. The questions will be re-arranged if the respondents themselves bring up factors from other sections. The interview objects are free to answer as they wish and may elaborate if so desired. Brief explanations of the concept discussed will be given if necessary.

<b>Primary question</b>	<b>Secondary/follow-up questions</b>
<b>Research question 1</b>	1. Do you think the rationale of co-location is necessary for cluster project success?

How do you think cluster theories can be transferred to cluster projects?	2. Do you think being revolved around a single or supporting industries is critical in cluster theories?
<b>Research question 2</b> What are the implications of engineering clusters?	1. How do you think engineering clusters differs from clusters emerging naturally? 2. What enables the engineering of clusters in certain countries?
<b>Research question 3:</b> What are your thoughts regarding the proximity term in relation to a cluster project?	1. Do you think some dimensions of proximity are more pressing in a cluster project compared to established clusters? 2. Do you think the cluster project described has some disadvantages or advantages in relation to proximity?
<b>Research question 4</b> What are your thoughts regarding the embeddedness literature and the strength of weak ties in a cluster project?	1. Do you think cluster projects require strong ties and why? 2. Do you think cluster projects require weak ties and why?
<b>Research question 5</b> What are your thoughts about the establishment of communicative rationality and social action in a cluster project?	1. Do you think the establishment of communicative rationality is a requirement for cluster emergence? 2. Do you think the establishment of a common language is a requirement for growth in cluster projects?
<b>Research question 6</b> What are your thoughts around the topics of heterogeneity and diversity in relation to cluster projects?	1. Do you think heterogeneity within a cluster project relates to innovation? 2. How does diversity relate to innovation within cluster projects?

**The respondent is asked if they would like to add anything or ask questions related to the thesis.**

**Thank you for participating in the research process!**

