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An Empirical Case Study on
Knowledge Networks as a Framework for Knowledge Management

Supervisor:
Dan Kärreman

Wassa Camara

M.Sc. BLC LMS

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Abstract

Taking practice perspectives of ‘knowledge’ as a point of departure, the paper at hand investigates how Copenhagen Capacity (CopCap) actively uses networks to advance its organizational goals. In doing so the investment promotion (IP) agency of Copenhagen draws on networks to build a compelling business case for foreign investors. Knowledge becomes a crucial resource in the ambition to attract and retain the respective to the Danish capital and thus spur regional growth and economic prosperity. CopCap is thus referred to as ‘knowledge intensive firm’.

One way of going about this difficult task is to organize your network in a cluster initiative, as it has been the case with the Copenhagen Cleantech Cluster (CCC). As such the research question of this work has been set-up to investigate how CopCap uses networks as a framework for knowledge management. An in-depth case analysis on the CCC as one example has been conducted.

The argument goes that after the cleantech organization has become independent from CopCap, self-sustainable and financed by its members, the institutional set-up or the architecture of how the cleantech cluster is linked to the mother organization CopCap has changed dramatically. The whole process culminated when the CCC merged with the LEAN energy cluster into CLEAN and finally moved out of the common office spaces in August 2014. The informal knowledge sharing and knowledge transfer that has occurred naturally between people that shared a common identity and considered themselves as colleagues before fail to materialize on a daily basis ever since.

It seems a conscious effort needs to be done to re-design the pipelines for knowledge sharing and knowledge transfer that have carefully been crafted during the five year project period of the CCC. In order for this to be successful, management needs to take a decision on how the two organizations should be working together in future. For the IP consultants in CopCap it also means that they need to continuously reach out to the employees of CLEAN to maintain those pipelines and the good network relations. The reason for this being that the cluster organization is key to build sector specific value propositions for foreign investors.

What has once been one community has now been divided into two. This shift in the institutional framework thus poses a challenge in terms of knowledge management, as part of this knowledge network that used to be an integral component of CopCap is now external. A strategic approach of how to actively use each other and by this develop new practices that foster knowledge sharing and knowledge exchange is needed.

1. Introduction

As the era of the knowledge intensive firm progresses, particular attention is paid to 'knowledge' as the prime economic resource, which is the case in both academia and organizations alike.

Especially the concept of 'knowledge management' airs the impression of being in control of this critical concept that is yet not easily graspable. IT based knowledge management systems have thus become the "Holy Grail" of the knowledge intensive firm to tame this impetuous resource, as opposed to physical resources or products respectively. What this false promise that lingers in the idea of 'knowledge management' ignores though, is the complex and highly political nature of knowledge. Knowledge is not neutral. And it certainly is not 'good' per se.

An alternative view suggests that knowledge is embedded in social practices. This ambiguous, dynamic, unspecific and yet very complex concept of 'knowledge' portrayed here seems difficult to join with the quest of control and efficiency as posed by 'management'. Under this circumstance, the question then becomes how to manage the flow of knowledge successfully. A more normative form of control in the sense of communicating what forms of behaviour are desirable or even expected from the respective employees to reach organizational goals might be a more fruitful strategy here. The importance of this becomes even more obvious, understanding the central role of knowledge being the critical resource in terms of both input and output of the knowledge intensive firm. Human resource management gains momentum as knowledge is exchanged between people, the 'knowledge worker'.

Practice perspectives advocate that knowledge sticks to practice, which consequently means that it is not easily shared where people do not share practices and common understandings (Swan et al. 2009). According to Swan et al. (1999) networking is a central aspect of process perspectives, which promotes knowledge sharing through social communication processes. Networks become channels for the flow of knowledge. Hence, networking can be portrayed as a boundary-spanning activity where individuals get hold of knowledge as embedded in broader structures. Viewing networks as communities emphasizes the significance of social networks as frameworks for knowledge sharing as the community forms their thoughts and actions (Swan et al. 2009). Social networking allows for knowledge to be continuously negotiated.

In that regard the organization for investment promotion (IP) in the Danish Capital Region, Copenhagen Capacity (CopCap) knows its craft in the sense that it successfully organizes the most relevant partners around itself in order to tap into their knowledge and expertise for the advancement of the organizational goals. One way of doing this is to create a network that

comprises the most important stakeholders of a specific sector with CopCap as the coordinating body in the middle.

The thesis at hand puts forward the case of the Copenhagen Cleantech Cluster (CCC) Project as one of the projects that was initiated at CopCap in connection to knowledge management. In this example it was assumed that gaining profound insights on the newly coined 'cleantech' sector would help attract foreign cleantech companies to Copenhagen. Respectively, the CCC was established as a triple-helix cluster, meaning that it represents public authorities, the industry and research institutions alike to cover a broad spectrum of the most relevant actors in the local cleantech sector. As a cluster organization, the CCC can be seen as a facilitator between the partners involved to bundle efforts and increase the efficiency of the cluster. Here, it is important to make the distinction between the geographical cluster and the cluster organization. In general a cluster is understood as a geographic concentration of interconnected partners in a specific field. In this case the cleantech sector in Greater Copenhagen.

Towards the end of the five-year project period, the CCC embarked on a journey of profound organizational transformation with the ambition of becoming a self-sustainable organization, independent from CopCap. Ever since the cluster organization has merged with the LEAN energy cluster to become CLEAN in May 2014 and finally moved out of the CopCap office spaces in August 2014.

The people that had previously been colleagues are now part of different organizations, pursuing different organizational goals. While CopCap tries to attract foreign companies and investors that are not yet located in Copenhagen, CLEAN is loyal to the local member base that are now paying members of the cluster organization. The usual casual and informal meetings such as at the coffee machine or at lunch fail to materialize on a daily basis, which poses serious challenges on how knowledge is shared. First and foremost it will be a question of establishing a common ground on how CopCap and CLEAN should be working together in future. Looking at it at a deeper level, it will also be about developing new practices of interacting with each other, which becomes crucial in terms of knowledge sharing and knowledge exchange.

From the perspective of CopCap, the question then becomes how to tap the knowledge that has previously been embedded in the organizational structure. Here, Brown & Duguid (2001) remind us that a firm's knowledge base is not necessarily a property that falls within its boundaries, but one that in parts draws on its embeddedness in broader structures. The importance of the organizational architecture and the ways communities are connected is further highlighted (Brown

& Duguid 1991). What becomes important here is to find a compromise between keeping the autonomy of communities, while fostering pipelines that allow their experiments to be shared at the same time. A pivotal aspect for CopCap then becomes how to re-negotiate an institutional context that stimulates and shapes the process of knowledge creation between CopCap and CLEAN for the benefit of both organizations.

Taken together this has led to the following research question: *What role do clusters play with regard to knowledge management at CopCap?* In the following the background of the case at hand will be established. The research design will further be explained in order to give an idea of what can be expected in this thesis.

1.1 Establishing the Background

CopCap is the official organisation for IP, business development and cluster growth in the Danish Capital Region. It has as such been founded as a non-profit organisation with the mission to grow the local business capacity by strengthening the international competitiveness, marketing the regional strongholds internationally and improving framework and factor conditions for businesses, cluster organisations and international talent. The performance of the organization is measured in the number of jobs they manage to attract and retain in Copenhagen.

The organisation is governed by a Board of Directors, which consists of 13 members. Six members are appointed on the basis of the political position they hold. Those in turn appoint seven independent members. In that regard it can be said that there is considerable political interests at stake in the organization, as we will further see in the course of this assignment. However, it is also true that CopCap has managed to stay an agile player in the Region of Copenhagen positioning itself right in the middle between local authorities, the business community and research institutions. As a consequence, the organization plays an important role in knowing and connecting the different partners, which often takes place under the umbrella of specific projects.

Among those projects has been the CCC project: it ran from 2009-2014 and ended up being the biggest of its kind in the EU, largely financed by structural funds. The project was born in sight of the United Nations Climate Change Conference Cop15 that took place in Copenhagen in 2009. The Danish capital had set itself great ambitions to stop climate change and came up with an ambitious climate plan to take up the (white) man's burden and become a front-runner in green or clean technologies. The aim was clear: Copenhagen wanted to become the first CO₂ neutral capital in the world by 2025. A new and very promising economic sector, 'cleantech' was born and added

to the portfolio of specific sectors CopCap should be targeting in their ambition to spur local growth.

Three years into the CCC project the question of what should happen to the cluster organization once the funding runs out in 2014 has been posed and discussed. It was decided to establish a self-sustainable, member-based association, which was put into practice in Fall 2013. With this the CCC has embarked on a process of organizational change as mentioned at the outset.

1.2 Research Design

The work at hand starts with a literature review that carves out the key concepts that will find application here. It is relevant in terms of classifying this paper and highlighting how it fits into the existing research landscape on 'knowledge'. In doing so, terms such as 'knowledge work' and 'knowledge intensive firm' will be elaborated on. Hoping to get a better understanding of what seems to be an inherently ambiguous concept, structural perspectives on knowledge will be contrasted with process and practice perspectives that tend to focus more on 'knowing' as a practice instead of 'knowledge' (Swan et al. 2009). As a direct consequence of the friction between the two paradigms the usefulness of 'knowledge management' is being questioned as both terms are based on very different assumptions and have very different implications that might not be easily reconcilable (Alvesson & Kärreman 2001).

Social networks as a more people focused attempt to manage the flow of knowledge become an interesting alternative, which acknowledges that knowledge is embedded in social interaction and social practices. Here relationships, common understandings and approaches to knowledge formation and sharing gain importance. The focus of this paper will be on knowledge sharing and knowledge exchange, facilitated by cluster organizations as reflected in the research question.

The aim of this Thesis is to inspire new ideas and illustrate the abstract concepts with an empirical case study research. Knowledge is a slippery concept and difficult to grasp. Thus special attention will be paid to how it is that knowledge is used in action. The method applied here will be the inductive case method to explore and build new theory. CLEAN will serve as a case, which will be investigated with help of interviews from the perspective of CopCap and a particular attention to IP. The subject of study is thus CopCap and how they use networks such as clusters as a framework for knowledge management. This will hopefully help to understand how both organizations make sense of the recent organizational change and what are the implications for how knowledge is shared and exchanged. The delimitations will further be outlined in the methodology section.

The analysis is divided in three main parts. The first part focuses on the role of knowledge at CopCap as a knowledge intensive firm. The second part elaborates on the CCC project as a prime example for the establishment of clusters at CopCap. It will be established how positioning at the centre of a sector specific network benefits the work of the IP agency in terms of value creation. An evaluation of the project and lessons learned will also play a role here. The main findings are the problematic set-up of a project, which lies in the very aspect of being a timely limited endeavour as well as the important role of clusters in terms of stakeholder management mainly in the Greater Copenhagen area.

In the third part CLEAN will be put under scrutiny. The transition period from a project within the boundaries of CopCap towards a self-sustaining member-based organization that has merged with a national cluster organization will be of relevance here. The role of CLEAN in the cleantech ecosystem in Copenhagen is another vital aspect, the fit between CopCap and CLEAN, the value of CopCap for CLEAN as well as challenges for future collaboration will also be put under scrutiny.

The discussion then interprets the findings laid out in the analysis in proposition of the research question, i.e. the role of clusters for knowledge management at CopCap. This section gives room to interpret the case specifics that have been harvested and collected from the interviews. In doing so the findings will be contrasted against the theories as laid out in the literature review. The first part of the discussion focuses on the informal network relations and the relationship between the employees of CopCap and CLEAN. The second part looks more at the formal relation between the two organizations in terms of strategy and managerial considerations of how both should be working together in future. Finally the implications will be discussed before the conclusion will round off the paper at hand.

2. Literature Review

For various reasons both knowledge management and the idea of managing knowledge still enjoy relative popularity in modern work organizations. Among the reasons for this phenomenon is the seductive idea that relates the term ‘management’ with control and the feeling of taking influence on work. What swings with the term ‘knowledge management’ is the offer of distinct practices and skills that can be trained for managers to increase efficiency (Alvesson & Kärreman, 2001). It follows that knowledge management is likely to have a rhetorical appeal due to the promise it entails.

However, recent studies question in how far this is the case, given that the economies of the developed world are moving away from industrial work, towards a service economy, which relies on knowledge work instead. The division of management as people using their brain and workers as using their hands does no longer apply. In this sense “Knowledge work perhaps involves the orchestrated work of several knowledgeable specialists, but it leaves little room for pure orchestrators.” (Kärreman & Alvesson, 2009, p. 1116). It could in fact be said that when the emphasis lies on management, there is less knowledge to be managed, and conversely as knowledge becomes more important, the less room there is for management to have an actual impact (Alvesson & Kärreman, 2001).

The following is a literature review, covering the concepts of knowledge work and the knowledge intensive firm, knowledge and knowledge management, as well as knowledge networks and communities of practice.

2.1 Knowledge Work and Knowledge Intensive Firms

According to Swan et al. (2009) there are three dimensions of knowledge work, namely enabling context, purposes and process. Knowledge work means knowledge is de facto the main resource to work, the primary way of accomplishing the work and the main result (Swan et al. 2009). In this regard the knowledge worker becomes the organization’s primary means of production, thus highlighting the function of Human Resource Management (HRM) in organizations. The centrality of human activity consequently implies that knowledge work is directly linked to the knowledge worker in terms of capacity, motivation and performance (Swan et al. 2009). While still being employees they need to be treated differently from other groups of employees, as they are no longer seen as a cost but as a valuable and strategic resource: “Knowledge work differs from other forms

of work because it is assumed to draw upon intellectual and cognitive abilities, rather than strength, craft, capital or a well-oiled machinery.” (Kärreman & Alvesson, 2009, p. 1117).

Knowledge workers usually have high levels of education and have specialized skills in their field. On top of that, they are able to apply these skills in practice to identify and solve problems. As Kärreman & Alvesson (2009) point out, the employees of knowledge-intensive firms are usually expected to be involved in complicated and demanding assignments, which cannot be nicely turned into standardized work routines. Consequently, managing knowledge work deals more with the creation of enabling framework conditions that have a positive impact on processes and practices of using knowledge for particular assignments and purposes (Swan et al. 2009).

This resource view on knowledge and with this inevitably also on the knowledge worker results in the following: “High retention rates are particularly important where firms rely heavily on collaborative working arrangements in which unique and valuable collective knowledge is generated over time around local work practices.” (Grant 1996 in Robertson et al. 2003. p. 850).

Since knowledge intensive firms do not produce any tangible predictable outputs, knowledge work is very difficult to manage. As a matter of fact knowledge workers enjoy a great deal of autonomy and freedom to organize and decide about their own work practices regarding how they do their tasks. While they do not have the ‘strategic autonomy’, they do have a great deal of ‘operational autonomy’ (Bailyn 1988 in Swan et al. 2009). An inherent aspect thus is that individual judgement and discretion is inseparable from knowledge work (Kärreman, 2010).

As a vital facet of knowledge work, knowledge sharing for example is a voluntary behaviour and cannot be mandated by rules and procedures. In fact particularly knowledge sharing occurs more frequently where people see their work organization positively (Thompson and Heron 2006 in Swan et al. 2009). This hints at the importance of identity and sense of belonging of the knowledge worker with the employer. It might be useful to look at the ‘psychological contract’ between employer and employee, which proposes a more holistic view on the employment relationship as a whole and the implicit nature of this strategic exchange, which emphasizes the work design. It is worth mentioning that the level of commitment and motivation of knowledge workers is linked to whether or not the employer meets their expectations (Swan et al. 2009). Hence autonomy is important for both individual and group performance and is further underlined by the employees’ “ability to acquire and exploit sources of knowledge and legitimacy which are external to the organization” (Swan et al. 2009. p. 127).

The central issue still remains for the manager to make sure the worker uses this autonomy for the benefit of the organization. Knowledge management takes shape in the form of more invisible and disguised forms of management such as normative control, tapping the values and beliefs of employees for the benefit of the organization. The traditional stress on control has thus largely been replaced by more subtle control mechanisms such as a supportive organizational culture, which attempts to form the identity of the employee (Kunda 1992 in Swan et al. 2009). The subjectivity of the employee becomes a central issue of management in knowledge-intensive firms as they pay more attention to the administration of ideas, beliefs, values and identities of employees (Kärreman & Alvesson, 2009).

2.2 Knowledge

Taking a few steps back it is worthwhile taking a closer look at what is meant when talking about ‘knowledge’, a concept that is readily used, popularly also in combination with management as coined by Nonaka (1994). In this regard Swan et al. distinguish between two views on the concept, being knowledge as a possession and knowledge as a practice. In the former the individual is depicted as the container of knowledge, which highlights cognitive aspects where “knowledge is seen as a possession of the human mind and treated as a mental or (cognitive) capacity, or resource, that can be developed, applied and used to improve effectiveness in the workplace” (Swan et al. 2009. p. 3). In contrast to that, the latter views knowledge as enacted, constructed and negotiated through social interaction. This dynamic perspective on knowledge is framed as “intrinsic to the localized social situations and practices (practices of saying things as well as doing things) that people actually perform, and not something that can stand outside those practices” (Swan et al. 2009. p. 4).

2.2.1 Structural Perspectives on Knowledge

Along the lines of Nonaka (1994) the structural perspective distinguishes between tacit and explicit knowledge, in which tacit knowledge held by the individual can be transformed into explicit knowledge, readily available for the organization, through a process of conversion. Knowledge management then becomes a smooth, linear uncontested and unproblematic process.

This stream of thought has further given rise to Knowledge Management Systems, assuming that valuable knowledge, located in people’s heads (input), can be localized, gathered and

converted using information and communications technology (ICT), so that it can be used in novel contexts (output) (Tseng 2007 in Swan et al. 2009). This over simplification of knowledge management however, falls short of acknowledging that there might be types of knowledge that cannot easily be captured in codification and re-applied or duplicated in terms of economies of scale. “In contrast to bureaucracies where mission-critical organizational knowledge is ‘stored’ or is made manifest in procedures and processes, knowledge-intensive firms utilize knowledge made manifest in qualified individuals.” (Kärreman & Alvesson, 2009, p. 1117). The tools applied in industrialization cannot be applied in this context, as they are useless in the knowledge-intensive firm (Kärreman 2010).

This possession view of knowledge is precisely what limits knowledge management systems according to the process view, which sees knowledge as something that is not just owned and passed on from one individual to another. Knowledge is always in the making and is perpetually reconstructed in a dynamic process of action and interaction between individuals (Swan et al. 2009). Further criticism circles around the fact that knowledge is seen as a ‘thing like’ object or commodity, that is tangible and can clearly be defined. In contrast to that, McDermott makes the point that knowledge does not have a value of itself like money. The value of knowledge is context specific and unfolds in application to specific tasks (in Swan et al. 2009).

2.2.2 Process and practice perspectives: knowledge and knowing

Alternatively to the structural view Swan & Scarborough (2001) suggest to see knowledge as an inherently problematic concept, which is fragile, politicized and dialectical, thus being in the making, continuously constructed and deconstructed. This view on knowledge goes along the lines of the theoretical framework of social constructivism. The process and practice perspectives on knowledge, or knowing for that matter, have led to a shift towards focusing on ‘knowing’, an activity both on the social and organizational level as opposed to ‘knowledge’ as a tangible object (Swan et al. 2009).

Viewing knowledge work in the light of this particular theoretical tradition has initiated a shift in “seeing knowledge, or knowing, as a process of ‘sensemaking’, whereby actors interacting within particular social contexts come to negotiate understandings of the world” (Swan et al. 2009. p. 14). Similarly this argument is also taken up in the article *Bridging Epistemologies: The Generative Dance Between Organizational Knowledge and Organizational Knowing*, where Cook and Brown argue that new knowledge and knowing is obtained by using knowledge as an

instrument for knowing in a dynamic dialogue with both the social and physical context (Cook & Brown, 1999). From this follows that knowledge is equivocal, dynamic and context-dependent, thus viewing the relationship between increased knowledge, knowledge transfer and organizational performance as socially and politically negotiated. Outcomes are dependent really on the fit of tasks, actors and contexts and how these come together at a specific point in time (Swan et al. 2009). An important role is ascribed to networks as highlighted by the process approach, which ascribes a pivotal role to networks in translating and transferring knowledge between groups and across contexts (Swan et al. 2009).

In their article Alvesson & Kärreman (2001) enlarge on the problems about the understanding of knowledge and give five main reasons for this. First, the ontological incoherence, which exposes the concept as being subjective, tacit and socially constructed as opposed to being true, verifiable, functional and non-problematic. Second and third, they criticize the vagueness of the term, which makes it an all-encompassing concept, without being specific, thus not being informative as it covers everything and nothing. Fourth, knowledge is often treated as objective and reliable from a knowledge management point of view, leading to fourth, that is approaching knowledge as objective, justified, true belief that can be tweaked and optimized like a screw in a machine. This is further related to the fact that people do not always act rationally as they are each guided by their very own subjective rationality. Fifth, knowledge is used in a functionalist way, in which it is viewed as an inherently good thing that necessarily has a positive impact on organizational performance. What this point seems to forget though is that knowledge and power are fundamentally related, seeing that knowledge creates a space for the exertion of power. And vice versa the exertion of power, makes knowledge possible. As a consequence knowledge seems to have a performative role in the sense that it creates rather than reveals truths, enables and constrains.

Kärreman (2010) establishes an interesting connection between power, knowledge work, and knowledge-intensive firms building on a resource-based view on knowledge: “The point is that knowledge, and the exploitation of esoteric knowledge as competitive advantage, change the power dynamics in organizations in a profound way.” (p. 1414). He further highlights the relevance of esoteric knowledge and the role of persuasion, which is of political and rhetorical nature and inherent to claiming expertise. The distinction between esoteric and common knowledge is made, where esoteric knowledge is the type of knowledge that ultimately matters for a company or a group of practitioners. In this case it does not matter, Kärreman argues, whether the knowledge is

tacit, explicit or both. This term thus clearly delineates the knowledge organization making use of the very specific and abstruse esoteric knowledge, as opposed to any other organization that uses knowledge in the all-encompassing sense.

It becomes clear that knowledge is an inherently ambiguous term where knowledge is a stock of expertise, rather than just a flow of information. And it is precisely this stock of expertise that makes up the quality of a knowledge-intensive firm. The ability to process information plays a subordinated role here (Kärreman, 2010). As the strategic importance of knowledge is being highlighted, no one doubts that managers develop a strong desire to manage knowledge in the hope of influencing and shaping the quality of the firm. However, the antecedent paragraphs have also highlighted the complex political process knowledge tends to become in the knowledge intensive firm, embedded in social context both inside and outside the boundaries of the firm. Consequently, one might ask whether knowledge can in fact easily be managed at the advantage of organizational goals - Alvesson and Kärreman (2001) answer the following:

“Knowledge is a concept far too loose, ambiguous, and rich, and pointing in far too many directions simultaneously to be neatly organized, co-ordinated, and controlled. Given the complexities, tacitness and ‘dispersed presence’ of the knowledge phenomenon there is a tension between knowledge and management.” (p. 1012).

2.3 Knowledge Management

The main pitfall about knowledge management still remains that knowledge cannot be viewed in terms of an absolute truth and a normative conception. The phenomenon is ambiguous, unspecific and dynamic. It is further inherently related to meaning, understanding and process, and thus not easily manageable (Alvesson & Kärreman, 2001). Hence, there might be a risk of trivializing knowledge by tapering its complexity, when bowing it to efficiency (Swan & Scarbrough). About the term ‘management’ Alvesson and Kärreman (2001) argue “the term is most informative when it refers to an agency with considerable authority and discretion, grounded in a formal position, and with an asymmetrical relation to non-managers. By definition a manager calls for somebody to be managed.” (p. 1003). However, doubts are uttered about the actual discretion and authority over other social groups and eventual loss of social status compared to other professionals, which might view managers as pure administrators that do not hold critical esoteric knowledge.

Both epistemologies on knowledge have significant implications for knowledge management. Viewing the individual as the owner of knowledge, the main ambition of knowledge management then becomes to unlock the knowledge and make it available for the rest of the organization, by codifying it or capturing it in an IT system as an example (Swan et al. 2009). Following the structural approach makes managers knowledge catalysts using tools such as knowledge management systems. However, this take has been criticized because social relations are reduced to enabling knowledge creation instead of being a penetrating aspect on the action itself (Robertson et al. 2003).

Overemphasizing IT and knowledge management systems is likely to result in a management that is based on economies of scale where codified experience is captured in databases and entered through the computer network of the company (Alvesson & Kärreman, 2001). Thus, this raises the question on the usefulness of knowledge management systems as put forward by structural approaches to knowledge. In their empirical study Swan et al. (1999) establish that while IT can enable communication and facilitate knowledge management, it can never replace people management and organizational practices that active encourage networking.

The challenge then lies in developing systems that do not aim at replacing people as the primary source of expertise. Adopting a process or practice view on the other side, which assumes that knowledge is about what people do and say, calls less so for converting, capturing and transferring, but more so for connecting various social groups and perspectives, identities and interests by an enabling framework to achieve certain tasks or purposes (Swan et al. 2009). Brown and Duguid (1991) suggest that story telling as a way of communicating knowledge is becoming more prominent, rather than codifying it in ICT. According to them stories serve as a connection between information and interest, values and importance, conveying an idea of the framework in which expertise has been nurtured, supporting us to catch the tacitness of the communicated knowledge (in Swan et al. 2009).

Along those lines, Swan et al. 1999 suggest two alternative models of knowledge management, the cognitive network model and the community-networking model. The first model emphasises linear information flows through static IT-based networks. The latter emphasizes the embeddedness of knowledge in social relationships and interactions and highlights the role of dialogue and sensemaking through active networking in constructing knowledge. It follows that knowledge cannot simply be possessed like information. Instead it needs to be re-created and re-constituted in a continuous and dynamic networking activity that is of an interactive and social

kind.

Hence, a divide between the interests in the ‘technology side’ and the ‘people side’ of knowledge management can be observed. The technocratic-type management mostly works with plans and systems, streamlining behaviour and quantifiable outputs. In the socio-ideological management type the building of identities; social relations and ideology play a more important role (Alvesson & Kärreman, 2001). Adopting a socio-ideological perspective of management makes knowledge management an attempt to exercise normative control. More attention is thus paid to bringing employees with the desired state of mind and motivation to the fore, thus emphasising more subtle and invisible control mechanisms (Kärreman & Alvesson, 2009).

Robertson et al. 2003 study how the institutional context stimulates and shapes the process of knowledge creation. In doing so they identify three main arenas in which institutional factors influence knowledge creation of professional practitioners: work autonomy, knowledge legitimation and social identity formation. Highlighting the role of management they found that “Specifically, in the arena of social identity, managers sought to accommodate professional norms through firm-specific arrangements, which shaped and mobilized a social identity geared toward corporate ends.” (p. 831).

Social networking is seen as an interaction process that allows for knowledge to be continuously negotiated. The purpose of knowledge management then is to tap the intellectual and social capital of individuals to improve organizational learning capabilities, recognizing that knowledge is the primary source of an organization's innovative potential (Swan et al. 1999). The importance of relationships, common understandings and approaches to knowledge formation and sharing within innovation processes are underlined. Brown & Duguid (1991) further highlight the importance of the organizational architecture and the ways communities are connected. An important point here is to strike a balance between keeping the autonomy of communities, while fostering pipelines that allow for the distinct communities’ experiments to be shared at the same time.

2.4 Social Networks

The following part deals with the organizational impact of social networks and the role they play in knowledge work because they are frequently viewed as an effective medium for knowledge sharing and overcoming barriers such as functional silos and hierarchies. Viewing networks as channels for

the flow of knowledge, Swan et al. (2009) define one important aspect being the shape and structure of the network. To mention one example, networks that span between several organizations horizontally, make it possible for knowledge to be transferred across boundaries, both within and between organizations. Further important aspect is the kind of social ties in terms of determining the capacity of the network as a pipeline for knowledge. Granovetter (1973) distinguishes between ‘strong’ and ‘weak ties’. While strong ties are trust based and built on personal relationships and thus have a greater capacity in transferring tacit knowledge, weak ties comprise relations with a wider group of people and are more likely to be a source of new information.

Viewing networks as communities emphasizes the significance of social networks as frameworks for knowledge sharing as the community forms their thoughts and actions (Swan et al. 2009). The authors claim that the different characteristics result in different dynamics and effects. Channel types of network are rather open and built around individuals, who are connected through personal ties, in order to share information as they grow through social interaction and communication. Networks that are depicted as a community however have a rather closed structure as they are made of a social group, which is glued together by a shared identity, a feeling of shared goals and shared practices in order to support ways of knowing and shared learning: “From this perspective then networking is seen not as a case of linear information transfer but as a process of interrelating and sense making.” (Weick, 1990 in Swan et al. 1999, p. 263). Those communities grow slowly and are potentially more robust over time.

According to Swan et al. (1999) networking is a central aspect of process perspectives, which promotes knowledge sharing through social communication processes. The importance of networks and networking for innovation thus becomes apparent, as those boundary-spanning activities are how individuals get hold of knowledge and information in practice. Innovation becomes an interactive process requiring simultaneous networking across multiple communities of practice.

The practice perspective views knowledge as ‘sticky’ due to the fact that it is interwoven with practice and thus not easily shared where people do not share practices. Hence, according to this perspective, knowledge sticks to practice (Swan et al. 2009). This is also among the main reasons why sharing knowledge among different functions or disciplines within an organization and between organizations is difficult. Conversely it is probably relatively easy to share knowledge with people that have homogeneous practices. Sharing common understandings and meaning/belief systems greatly facilitates knowledge sharing. Nevertheless Brown & Duguid (2001) remind us that

too often the emphasis lies on community and not on the implications of practice and a sociocultural view of learning and knowledge. In doing so they “propose looking at knowledge and organization through the prism of practice – the way in which work gets done and, we would argue, knowledge is created.” (Brown & Duguid, 2001, p. 200). Taking the paradox distinction of sticky and leaky knowledge as a point of departure, they argue that internal divisions help explain stickiness, while external connections help explain leakiness. Together they suggest that a firm’s knowledge base is not a property that falls within its boundaries, but one that in parts draws on its embeddedness in broader structures.

3. Methodology

The aim of this Thesis is to inspire new ideas and illustrate the abstract concepts that have been laid out in the literature review with an empirical case study research. Especially dealing with ‘knowledge’ as a difficult concept to grasp and ambiguous in nature, this study wants to focus on how knowledge is used in action. From an ontological perspective, it is assumed that there is likely to be more than one reality or truths for that matter. This relativist approach underlines that facts depends on the viewpoint of the observer and the context, which could also be understood as time and place (Esterby-Smith et al. 2012).

Following the epistemology of social constructionism “The focus should be on what people, individually and not collectively, are thinking and feeling, and attention should be paid to the ways they communicate with each other, whether verbally or non-verbally.” (Esterby-Smith et al. 2012, p. 24). Speaking of the methodological implications there are many different realities and the aim of the researcher is to find out how structures are constructed by people in order to make sense of what is happening around them (Esterby-Smith et al. 2012). Accordingly constructionist studies are based on direct observation and personal contact, which usually involves the conduction of interviews in one single organization – a case.

After introducing the ontological and epistemological stance over this work, the methodological framework of case study analysis will be introduced, followed by the more specific methods and techniques relevant here, including information on the sample, data collection and analysis. The third part deals with issues of trustworthiness and validity, and finally the delimitations of the research presented here will be outlined.

3.1 The Methodological Framework

The first part enlarges on the overall methodological framework, which will be the inductive case method. The purpose is to identify the composition of techniques applied to inquire into a particular phenomenon, i.e. how the research techniques and methods are organized for the research conducted here.

Overall it can be said “Theory developed from case study research is likely to have important strengths like novelty, testability, and empirical validity, which arise from the intimate linkage with empirical evidence” (Eisenhardt 1989, p. 548). In this sense, the particular strength of the case method, Eisenhardt argues, lies in its autonomy from antecedent theoretical frameworks

and observations and is thus well-suited for the exploration of new conceptual relationships and paradigms and new research areas that are not captured by existing frameworks to date.

In sum it can be said that Eisenhardt comes up with a mixed methods approach to case study analysis as she argues for the use of predetermined research designs, while suggesting to be flexible for later adaptation at the same time. In terms of positioning Eisenhardt's approach in the social science landscape it can thus be said that the author follows a relativist ontology and constructionist practices of inquiry and theory building. Her ambition is to understand how humans make sense of the world. At the same time there are also functionalist elements in her approach, as she is looking for a rational explanation of behaviours and institutions, i.e. why particular problems occur in relation to the function the object of study performs. However, the aim of this exercise follows a more positivist view of research or epistemology, focusing on the generalizability of testable hypotheses and theories.

Conversely Alvesson and Kärreman (2007) claim that on the journey of theory creation, it is especially the breakdowns, that is the unanticipated and unexpected that is interesting. It is the friction between theory, the subjectivity of the researcher and the empirical material that offers opportunities for resolving those mysteries and thus develop theories. The authors further claim that all research encounters breakdowns as long as social realities are not understood in their entirety. In their article, Alvesson and Kärreman lay out possibilities for a more creative way of developing theory. In doing so they adopt a moderate version of constructionism. The development process hence proposes for the researcher to open up, observe and develop and rethink theory. Empirical material, rather than speaking of data, is viewed as a constructive dialogue partner that can help uncover and understand mysteries by conducting innovative theoretical work.

One of the main contributions is that this approach departs from the view of research as a rational process that separates theory from data, but sees it as a process of working with empirical material that uses the subjectivity of the researcher including sensitive constructions, interpretive repertoires, and reflexivity as a resource of unlocking and informing mysteries. The generation of new ideas such as innovative theory is portrayed as a creative process that leaves room for the researchers imagination.

3.2 Methods and Techniques

The case study, which will be laid out in the coming sequence, largely follows the steps as outlined by Eisenhardt (1989). In terms of case selection, it can be said that the subject of study will be

CopCap, the official agency for IP in the Danish capital region of Copenhagen. More specifically it is about finding out in how far CopCap uses networks such as clusters as a frame for knowledge management. As such the selected case is likely to replicate existing theory and extend the existing theory on knowledge intensive firms, knowledge work, knowledge networks and knowledge management in particular.

Having worked in the company for more than a year, I have been able to get to know the organization, which is recognized for being extremely good at building knowledge networks and mobilizing local stakeholders. During my stay in the company I have been part of conducting an analysis on knowledge sharing within CopCap, thus highlighting the relevance and creating a momentum for the role played by 'knowledge' to achieve the set goals and targets. This has thus served as a starting point when looking at this distinct knowledge intensive firm and has led to the following research question:

What role do clusters play with regard to knowledge management at CopCap?

The relevance of identifying a research question, according to Eisenhardt, is to maintain the focus of the research. The research question has been developed by joining the case with the specification of the relevant concepts that have been laid out in the literature review. After this, the initial research design has been shaped and interview questions have been drafted.

The employees of this knowledge intensive firm make up the population of study, which is interestingly a non-profit organization that is financed by the Capital Region of Copenhagen and Region Sealand. This aspect will be important when talking about the limits of the generalizability of the main findings and the entities about which conclusions will be drawn.

3.2.1 Sample & Questionnaire

Deciding about who should be included in the sample is important. The ambition here has been to cover the terrain of the various people involved with the CCC project (now CLEAN), the people working in IP in CopCap in cleantech related areas, the people working on project development and knowledge management in CopCap and finally the Management. This broad selection of people will hopefully yield a broad picture of the role of knowledge networks for knowledge management at CopCap and thus cover most of the aspects that are relevant in the case at hand.

A basic questionnaire (see Appendix on USB) has been developed to investigate the research question in consideration of the critical concepts that I intend to find out more about in this setting. In a second step the catalogue has been “customized” and adapted in the sense that questions were added or left out depending on what particular insight I wanted from the interviewee. The sample comprises ten selected current as well as former CopCap employees that have found to be of relevance as explained on top of the respective transcribed interview, to be found in the Appendix on the USB stick:

- 1. Kanval Sheikh (CopCap, Business Development Manager – International Cleantech Network (ICN))**
- 2. Stephan Skare Nielsen (CopCap, Head of Secretariat – ICN)**
- 3. Klaus Rovsing (CopCap, Head of Analysis)**
- 4. Djouhara Oualli Westberg (CopCap, Business Development Manager – Cleantech)**
- 5. Rune Rasmussen (CopCap, Team Leader - Development)**
- 6. Marianna Lubanski (CopCap, Director - IP & Clusters)**
- 7. Anne-Katrine Nielsen (CopCap, Project Manager - CHC)**
- 8. Michael Johansen (CLEAN - Head of Business Development)**
- 9. Nikolai Rottbøll (Quercus - Director and Founder)**
- 10. Claus Lønborg (CopCap, CEO)**

3.2.2 Data Collection

According to Eisenhardt (1989) the case study approach helps investigate the dynamics in a specific setting. In this paper qualitative data obtained from interviews will play the most significant role in the data collection process. Relying mainly on primary data, the aim is to gain new insights and have a greater confidence in the outcomes. The possibility of making adjustments during the process of data collection opens the opportunity of incorporate learning along the journey of theory building. In practice this could for example be adding questions to the questionnaire or test emergent themes. Eisenhardt calls this flexibility ‘controlled opportunism’ as opportunities open up while exploring the field.

3.2.3 Analysis

Within-case analysis will be an important aspect to generate insights and become familiar with the patterns that are specific to the case. The focus on one case will hopefully generate deeper insights of the object of study instead of superficial ideas. An important aspect of the analysis will be interpretation. Here triangulation and comparison between the different views laid out by the individual interviews, in terms of sensemaking and understanding will play a role. This study allows for multiple ‘truths’ to co-exist next to each other and thus give a richer picture of the empirical study.

Alvesson and Kärreman (2007) imply that the researcher must actively engage and work with the material instead of passively reflecting reality. In that regard sensitivity to language is an important issue when conducting interviews as used vocabularies both reveal and conceal specific aspects. Theory is thus viewed as a tool for disclosure: “Carefully constructed empirical material is used to problematize a targeted theory, thus opening it up for reconsiderations and alternative understandings.” (Alvesson & Kärreman 2007, p. 1274). Those mysteries open a stage for problematization and self-reflexivity that is independent from established and internalized theoretical frameworks without being detached from them.

In very practical terms, the interviews have been transcribed word by word. Though time consuming, this exercise has been critical to be able to properly engage with the material afterwards. This entailed skimming the text for common themes and topics that have surfaced during the interviews. Those thematic areas have then served as the basic framework for the tabulation that followed. Here relevant testimonies from the interviews have been organized in an excel sheet in a way that would allow to contrast the statements with each other (see Appendix on USB).

In terms of the analysis it must be underlined that the focus lies solely on the case specifics that have been disclosed by the interviews to answer the research question. This part is thus a way to scrutinize the provided data independently from established theory. In spite of the theory being weaved into the data in the sense that it had previously been used to set up the questionnaires, theory is not used to make sense of the data just yet. In the discussion part that is affiliated to the analysis, the explored themes become abstract themes that are then being confronted with the existing literature in this field.

The outcome of this inductive case study will then hopefully be theory generation and new insights on the existing literature on knowledge networks and knowledge management in the knowledge intensive firms.

3.3 Trustworthiness & Validity

Golden-Biddle and Locke (1993) identify three criteria for ‘validity’ being authenticity, plausibility and criticality (in Esteban-Smith 2012). In sum, it is about in how far an accurate representation of the object of study can be provided by the research findings.

First of all let us look at authenticity. Being part of the organizational setting under scrutiny here, I have been able to acquire a deep understanding of what is taking place in the organization, which will be helpful in interpreting the data. However, this strengthens even more so the point made by Esteban-Smith et al. (2012), being that “the recognition that the observer can never be separated from the sense-making process means that researchers acknowledge that theories which apply to the subjects of their work must also be relevant to themselves.” (p. 26).

Second, plausibility will be established by linking and embedding the empirical study to or in the framework of existing theory, concerns and interests among researchers. Besides fortifying the validity internally, it also enhances the level of generalizability and theoretical level of theory building from case studies.

Third, criticality will hopefully uncover new aspects that make the reader question his assumptions and the established theoretical understandings.

As pointed out earlier, the strength in theory building processes of case study analysis lies in the likelihood of validity as the resultant theory is closely linked to the case specific realities and empirical observations. Looking at the weakness of this approach Eisenhardt (1989) points out, that it might also result in theory that is too complex as it tries to capture every element of the case, while on the opposite side, there is also a risk for theories that are too narrow or idiosyncratic to be generalizable.

Most importantly the results should be believable, the methods applied should be transparent and comprehensible for the reader and the reporting of information should give confidence that the theory is valid. In this work, the data from the interviews and questionnaires has been organized in a table.

3.4 Delimitations

At least four aspects should be taken into consideration when reading this paper. First, the information obtained via the interviews can be biased due to self-presentation, the frame and the wish of the interviewees to appear in a certain way.

Second, when choosing and applying theory, a selection is also a de-selection of other possibilities. Taking this into consideration, alternative theoretical frameworks could have been explored as a possible lens to look at knowledge management at CopCap. This selection naturally affects the epistemological frame.

Third, being a part of CopCap myself has the advantage of familiarity with the content of investigation such as the used language and terminology, daily routines, power structures and sense for what the interviewees will be talking about. However, a possible bias cannot be denied due to my contractual relationship with the object of study.

Fourth, I have deliberately chosen to look at this topic from the perspective of CopCap and more specifically from an IP point of view. Many other perspectives could have been chosen to understand the case at hand, which naturally influences the analysis.

4. Analysis

The analysis aims at understanding the case at hand in order to find answers to the research question. In doing so the first part thus focuses on the importance of knowledge for CopCap and the work in the IP department. Viewing CopCap as a knowledge intensive firm this is important in order to grasp the general need of managing knowledge or influencing the flow of knowledge in the first place. Particular attention will further be paid to the establishment of clusters and how they can be of relevance for CopCap's core activities and a framework to channel knowledge in the second part. Here, the Copenhagen Cleantech Cluster project will be at the centre of analysis.

The third part then looks at CLEAN and the organizational change process the initiative has been through in the ambition of becoming a self-sustainable and member-based association and after merging with the national LEAN Energy Cluster. It becomes clear that the framework to channel knowledge has changed significantly. As a consequence of the changing and weakening institutional framework between the two organizations, there has been a breakdown of knowledge exchange. As a matter of fact new ways of interacting and meeting need to be developed to keep up the flow of knowledge because the ones that had been developed during the five-year project period of the CCC before are no longer relevant.

4.1 CopCap

Being among the key players for IP in the region of Copenhagen, CopCap has a relatively narrow portfolio of what it is supposed to do, thus focusing on attracting companies, talent and capital to support economic growth in the region.

The first section establishes the centrality of knowledge for IP in CopCap. There seems to be a general agreement that "It's more than very important because without knowledge you can't do your job in attracting companies." as cluster expert and former CopCap employee Nikolai Rotbøll points out. CopCap is thus portrayed as a knowledge intensive firm, thus putting knowledge at the centre of the organizational activities and highlighting the role of the knowledge worker at the same time.

4.1.1 The Role of Knowledge for CopCap

Echoing the statement above, the CopCap CEO confirms that knowledge is the core asset of the organization, as the company does not have any physical product to sell or unique services that

stand out in any way. The value CopCap provides adds up to having specific value propositions that are embedded in a package, which can be offered to the customer, typically a foreign company that wants to open an office in Copenhagen. In doing so the IP agency is dependent on working together with a large and diverse network of sector specific experts and service providers such as cluster organizations, law firms and accountants:

“What we have to offer to our client and the reason for our being is the knowledge that we have, not only in the organization ourselves, but also that we know of who knows what. And the cluster initiatives that you mentioned are of course one way of organizing and sharing knowledge within the cluster and within the members here.” (Claus, CopCap CEO)

There is no doubt that knowledge is an important aspect in the daily work of CopCap and in the ambition to attract and retain companies, talent and capital. Especially the CopCap activities that go beyond the sheer attraction of the previously mentioned points are closely related to knowledge. One example here is the establishment of cluster organizations, but also the ambitions of improving the general framework conditions that will ultimately increase the attractiveness of the Copenhagen area for businesses.

Speaking of IP and the knowledge that an IP consultant needs to successfully attract a foreign company, two types of knowledge are required. First, a consultant needs to have a good overview of the market in Copenhagen. This includes the opportunities in the home market, gaps in the market such as technology gaps. This knowledge can be acquired in collaboration with local partners, which is where clusters such as CLEAN become interesting. Also, it is vital to consider the cleantech sector in particular, as a very knowledge intensive area in itself, which further requires wise policies, research and partnerships to explore technical areas that are often still immature.

Second, there is another type of knowledge, which according to Stephan, who has been part of setting up the cleantech department at CopCap, is much harder to acquire: “Getting a success case for CopCap, which is a foreign company investing in Copenhagen, is a matter of finding the right company at the right time, which is very hard to do.” Or as the Head of analysis sees it, CopCap is a knowledge institution in the sense that everything the organization does is about knowledge and how to make that knowledge relevant to the important external economic actors. Knowledge is thus at the heart of the CopCap business, as it is used to influence the people and the companies that the IP department works with in the decisions they make. Strategy wise, there is no conscious, well defined or explicit way of going about knowledge management at CopCap. Instead it has been argued that the way knowledge is communicated at CopCap is lived.

An alternative way of explaining the role of knowledge at CopCap is to speak of a ‘methodology knowledge’ on the one hand and a more ‘case specific knowledge’ on the other hand. Whereas the former deals with knowledge on “how we do things” in terms of IP, Rune, who is in charge of the development team now, claims that there is a system in place regarding certain processes for example in expand & retain that works: “You pick it up eventually, you kind of learn it. But you see that the consultants that have been here for a while are phenomenally more effective. It takes a while to get this knowledge on how processes work and really what’s a good lead, what’s not a good lead.” (Rune). This suggests that this is some kind of knowledge that is embedded in the organization and the distinct practices that are crucial to close a successful IP case.

The latter type of knowledge is case specific knowledge that deals with finding out what would trigger a specific company to set up a business in Copenhagen and finally build a compelling business case. This is typically knowledge that CopCap does not necessarily have in-house. Considering that this knowledge is very sector specific, it makes sense to work together with sector specific cluster organizations and reach out to experts from the network to find the expertise needed. The establishment of clusters thus becomes interesting from various perspectives, in terms of directly working together with the cluster organization, but also in terms of working together with the project partners, Ministries and local authorities, Universities and research institutions as well as local cleantech companies.

Both on a local Copenhagen level, but also on a national Denmark wide level, CopCap has earned its reputation as an organization that is very good at building up those knowledge networks and cluster initiatives more specifically. It is an interesting point viewing that building sector specific knowledge networks does thus not originally belong to the core activities of CopCap as such, which explains Rune’s opinion that CopCap is not a knowledge institution per se from a development perspective. However, CopCap engages in specific projects that aim at building specific knowledge networks such as the CCC project for instance, which is hotly debated in CopCap: “And whether we should do that or not, it’s a good question because it also makes the whole organization more blurry.” (Rune, Team Leader Development)

Compared to other organizations doing IP such as Invest in Denmark (IDK), which is part of the Foreign Ministry, the Director of IP & Clusters Marianna further points out that CopCap is a very efficient and lean organization: “Say we are maybe 20 people and we have to make 700 jobs at least and we have a budget that’s about 25.000 DKK per job, something like that. If you go to Invest in Denmark, they are maybe 50 people, they make 1200 jobs and every job is about 40.000

DKK.” These are important figures to prove to the politicians who ultimately finance CopCap, that CopCap is efficient and cost effective.

Interestingly one main distinction in the way IDK and CopCap do their jobs is the two types of knowledge as distinguished earlier are decentralized in IDK, meaning that acquiring the local knowledge and the knowledge about a foreign company is assigned to two different people that are in two different locations. The fact that local knowledge and the client specific knowledge are not embedded in one person, leads to IDK having a challenge with knowledge sharing and the match between the value proposition and the client’s needs. In CopCap this distinction is not made, meaning that those different types of knowledge are embedded in one person.

The importance of knowledge becomes even more apparent, viewing that CopCap as a relatively small organization is working with a very diverse and difficult field of business that involves many different stakeholders. This is especially the case with regard to cleantech, where FDI is generally lower than in other sectors as the Head of Analysis points out. Being well aware of the challenging and yet fundamental importance of knowledge and how it is distributed Nikolai as one of the key initiators of the CCC project states, “...even in a small organization people are busy, so they forget some of the most important things actually, to talk together. Which is one of the most important recipes for creating success as an investment agency and a cluster organization.”

4.1.2 Scepticism towards Knowledge Management Systems

When conducting the interviews, it soon became clear that there is a general scepticism towards knowledge management systems, which was very interesting. Even though it had not initially been an issue of investigation here, about half of the interviewees thought it to be relevant to bring up the issue. From their experience these system rarely worked effectively.

What this scepticism also expresses though, is the firm belief in personal contacts for knowledge sharing, which can happen in a very low-tech way such as emails or meetings, both formal and informal. Also, with regard to the relatively small size of CopCap it is possible to share knowledge in a very informal way, based on networks and people knowing each other and what knowledge is relevant for the other people in the organization respectively.

On the other hand, the Head of Analysis also states that efforts could be made with regard to storing and codifying knowledge, which becomes relevant when people change positions or leave the organization. Nevertheless he also argues “It’s nice to find what he did back then but on the other hand in order for knowledge to become really relevant to some extent you also have to work

with the knowledge yourself.” (Klaus). Sometimes a report that is detached from the specific context it has been produced in might not yield the desired value even though the subject itself might seem relevant. In that report the content can become dead or irrelevant knowledge, where the reader looks at the wholes and flaws of the report more than seeing the essence of what was needed when the report was written.

In the opinion of the Head of the ICN, who started the cleantech department at CopCap, one of the main problems also is that knowledge management systems and IT somehow have turned into the “Holy Grail” enabling everyone to know everything, making them dangerous systems in his eyes: “For me the problem really is that people want everything served. People are just sitting in front of their screens, waiting for knowledge to pop out. But knowledge sharing is not a passive activity.” (Stephan) According to him the attempt to automate knowledge sharing stands in stark contrast with the nature of sharing knowledge and how people interact, emphasizing that it’s between people. In his experience, the most valuable knowledge for IP cases thus comes from meeting people in informal gatherings or in the hallway between people that trust each other.

This little excursion on knowledge management systems endorses the tension between ‘knowledge’ and ‘management’ with the help of IT tools as experienced by some of the interviewees. In that regard it is interesting to look at alternative ways of organizing knowledge or knowing as a matter of fact, as proposed by the research question. Hence, the next part of the analysis looks at cluster initiatives qua social networks and how they can potentially channel the flow of knowledge in order to create value for CopCap. The focus lies on the CCC project and the cleantech sector respectively.

4.2. The CCC Project

The decision to establish a cleantech cluster at CopCap was made in sight of Cop15 that took place in Copenhagen in 2009, which had triggered a euphoria of building green initiatives and projects in the geographical cleantech cluster around Copenhagen. The IP consultants that have been in charge of building up the cleantech department in CopCap at that time realized that the product to attract foreign direct investment or the value proposition for that matter was not very clear as the Director and Founder of Quercus underlines: “The story was impossible to tell and it was impossible to network to actually easily find your right way to the right person or company as a foreign direct investor, as whatever. It was just a jungle.” (Nikolai)

Speaking about the interest in starting a cluster initiative, there is agreement that everyone involved in the geographical cluster has actually had an interest in bundling the efforts and joining forces on the green agenda, as it has been the case for the CCC project. This point becomes even more relevant considering that Copenhagen is a relatively small city. At the time being there have been up to 250 different initiatives leading to Cop15. The sheer amount of initiatives meant that many of the stakeholders involved were part of 10 to 15 different initiatives, focusing on the same issues, where they would meet the same people in different networks over and over again.

At that point there had not been a cluster expert or considerable knowledge available on how to build up such a cluster organization. Nevertheless, from a CopCap perspective, the idea of getting an overview of the product and the local strongholds by gathering the relevant actors under the roof of a cluster initiative was in the end born for very selfish reasons. Once CopCap had established itself as the centre of those different initiatives, the hope had been to have a walk over to IP and attracting foreign companies using the accumulated knowledge about the existing technology gaps, synergies, needs and partnership opportunities in the local cleantech sector.

The following section elaborates on CopCap and the reasons for establishing clusters. The CCC project will be scrutinized as a specific example. Particular attention will be paid to how the CCC creates value for CopCap in light of the organizational goals, i.e. creating jobs. In doing so there will further be an evaluation of the CCC, focusing on the lessons learned and common problems with projects. The section ends with clusters as a tool for stakeholder management and how it can be useful for other strategic reasons other than strictly IP.

4.2.1 CopCap and the Establishment of Clusters

Looking at the reasons why companies decide to set up a business abroad and invest, issues such as access to know-how and talent, but also being at the epicentre of the latest development, are crucial for highly technical companies that need very specialized knowledge. When choosing the location, vital aspects as e.g. the ability to drive innovation, finding the right partners, having interesting and demanding customers constitute a cluster.

However, in many cases as CopCap's CEO points out, there is no one key aspect. Companies could choose to settle in Copenhagen, but equally well in Hamburg or Stockholm. The decision often comes down to more subtle arguments, such as access to political decision makers. A cluster can provide a solid base to pitch Copenhagen as the "cleantech hot spot". In that sense the cluster becomes a concrete and tangible value proposition has been a main reason for starting the

CCC project: “Because everybody was saying, we are a green region, we are a green region. But actually having something tangible, everybody says they have a green region, but we have the CCC and we can hook you up. If you land your company here, we can hook you up with all relevant partners in two days.” (Rune, Team Leader Development).

For CopCap it ultimately boils down to two main aims of creating clusters. One is to promote the regional strength, which can be viewed as a way of branding Copenhagen as being a green front-runner and green hub for example. The other is to create a magnet for foreign interest, where the cluster you build becomes the product that you are going to sell so to speak. As such a cluster organization makes the services that CopCap has to offer, i.e. IP, more tangible, which may include concrete projects and business opportunities such as tenders, that can then be sold to foreign companies and attract them to Copenhagen. Viewing IP as a way of selling the business attractiveness of Copenhagen to specific companies, it is further relevant to have a good understanding of the companies in the sector, i.e. what is the knowledge environment.

In light of CopCap’s interdependence with the regional political agenda, cluster organizations are furthermore a valuable tool to know what is going on politically. In that sense a cluster organization performs the role of a monitoring network that enables CopCap to know what is important and what the political agenda looks like. Speaking in concrete terms, the City of Copenhagen plans to put the recycling of plastics out to tender, as the incineration of plastics is still a major issue due to the undesirable emissions it releases. CLEAN will play a leading role in the execution of the tender, which can be used as a value proposition for CopCap to attract a foreign company.

Another important aspect when talking about the establishment of clusters certainly is, that CopCap is seen as a neutral organization and an “objective founder of stuff”, as the Director of IP and Clusters points out. CopCap seems to be floating between the stakeholders in the sense that there is no sole political, business or research purpose that drives the interests of the agency. At the same time CopCap has a good understanding of regional authorities, businesses and research institutions in the Copenhagen area, while being commercially oriented and business focused at the core. CopCap has a track record of building clusters.

In that sense the regional authorities see CopCap as an instrument to implement their policies. From the fact that CopCap is very business oriented, follows the ability to communicate with companies and the ability of getting their buy-in as a project partner in a cluster initiative. A regional authority, such as a Municipality, does not necessarily understand what makes a cluster

initiative a relevant and valuable project for a company to be part of. However, it can also mean that CopCap is asked to initiate certain initiatives that they would not necessarily have done otherwise. A recent example is the CHC, which was launched in November 2014. Whereas the city of Copenhagen was sceptical about the establishment of the CCC in the beginning, the Municipality has been pushing for the CHC for a while. Despite the strain it puts on an organization the size of CopCap, it is important for CopCap to show the Municipality that they can stem those kinds of initiatives.

This example strengthens the strong external logic that lies behind the establishment of clusters at CopCap, next to the internal IP driven logic that was dominant in the case of the CCC project: “And if you look at all the literature on clusters, it brings more productivity, more jobs, more employment, more talent. It brings all the good stuff that the region wants. So for that CopCap is a good organization for handling clusters.” (Rune, Team Leader Development).

To round this paragraph up, it is worth mentioning that the CCC project ended up being the biggest project financed by regional funds in Denmark ever, and the largest regional cleantech project financed by regional funds within the EU. Spending 142 million DKK on a project with a lot of partners each having concrete work packages with CopCap in the middle kept the organization rather busy for the years between 2009 and 2014: “When we started Copenhagen Cleantech Cluster back in time, there was no other initiative within cleantech. It was a fairly new business area it was recently coined as cleantech.” (Claus, CEO CopCap).

It has been discussed a lot in the past, whether or not CopCap should engage in projects that are not always directly contributing to the CopCap targets in the short term. The initial idea of establishing the CCC, i.e. to generate leads for IP, has proven to be difficult at the beginning. It takes time to build a network that is strong enough to live up to all the different expectations, and to gain a strong appeal on a local, national and also international level. In sight of IP, the aim has been to establish a one-point entry to the local cleantech cluster in order to create a hub for the sector.

After introducing the basic idea that lies behind the establishment of clusters as knowledge hubs, the next section investigates the role of clusters and how they can create value for CopCap in greater detail giving concrete examples. Clusters are further characterized as social networks and channels for the flow of knowledge here as they facilitate sector specific interaction that enable knowledge sharing and knowledge exchange.

4.2.2 Clusters and Value Creation

For CopCap, the ambition with starting cluster initiatives has surely been to create value for its core business, being IP. However, this has proven to be rather difficult for various reasons. One being that it is hard to find someone to finance those extra activities a hundred per cent, next to CopCap's core business. Another one that became apparent in the case of the CCC, is that all the different partners have their own interests, which need to be carefully balanced by the coordinating body to keep up the relevance of being part of the activities. It also means that the services that are delivered by the respective cluster organization need to meet everyone's needs, which eventually means that CopCap has to accept that it's employees and the Secretariat in charge have a lot of other things to do that might not directly be related to CopCap's core business and support the creation of jobs.

At the same time, there is no doubt that building a cluster initiative creates a lot of expertise on a specific sector in house, which will eventually feed back into the main activities, but there are surely challenges involved in that model as well. One example where the cluster organization has been able to create substantial value recently was the ICN conference in May 2014. Here CLEAN invited the global cleantech community to come to Copenhagen and discuss smart city solutions in six different tracks: urban mobility, energy infrastructure, waste as a resource, water management, big data for smart city solutions and creating the liveable city. For CLEAN, it has been a great opportunity to recruit new members and to create a platform where they could showcase their new organization after becoming self-sustainable and after the merger with LEAN Energy Cluster.

For CopCap the event has been a great opportunity to showcase all the relevant local stakeholders and how easily CopCap can facilitate the access to the city, the municipalities and regional authorities. This is especially relevant because it enables CopCap to engage with the potential foreign investors by offering them an experience without having to sell them anything directly, thus making it a very powerful and authentic tool. In that regard some of the IP consultants got a lot of value out of the conference as they could follow-up on the contacts they made afterwards. Among those contacts has been the German car sharing company Car2go, which came for the conference and had a speaker role on the urban mobility track. Alongside with their participation in the conference, the IP consultant could arrange meetings with the Municipality of Frederiksberg, which eventually lead to a successful finalization of the case.

What this example shows is that a lot of value can be created from working together with cluster organizations where it makes sense for both CopCap and CLEAN. At the same it is also true that there have been some conflict of interests in the planning and execution of the conference,

because each partner has had their focus and priorities in terms of what they wanted to get out of the conference, making it difficult to align the interests all the time.

In a way a cluster is a means of scaling the acquisition of knowledge for CopCap, in the sense that the cluster organization is exposed to both local members and stakeholders and international contacts. In other words, clustering is a smart way of organizing your sector specific network and knowledge in one place. In doing so CopCap establishes itself an infrastructure and a one-point entry for its own purposes. In trust that CLEAN will have a positive impact on important parameters such as innovation and the branding of Copenhagen as the place for state-of-the-art innovative cleantech projects, hopes are that the cluster organization will be able to deliver more value propositions once CLEAN is up and running.

The bottom line though is that there have been much fewer cases during the project period of the CCC than expected. One reason for this being that it takes longer time to build a well functioning network than one might have hoped. Another reason advocated here, which is a more general reason, is that cleantech might not be the sector with the most cross-border investments. Finally, there has been a design problem with the CCC, where the Region of Copenhagen and the Region of Sealand did not see the necessity to finance IP activities as part of the project. The argument being that they did not want to allocate extra money for activities CopCap is already being paid for in their ordinary budget, i.e. IP.

As a direct consequence, the project did not schedule specific IP efforts. There have been IP goals, but they were not supported by concrete activities that were targeted at IP: “It was just sort of assumed that well since it’s here they [the CCC employees] will meet a lot of people and have a lot of contacts and they will deliver those contacts to the rest of CopCap who should act on these leads.” (Klaus, Head of Analysis). In regard to the lack of targeted IP activities, CopCap’s CEO highlights on the other side that it has not necessarily been an issue of insufficient funds. Instead he suggests that the projects provided by the CCC have not necessarily been of interest for an international audience or where an international investor could see himself fitting in.

The next paragraph deals with the evaluation and lessons learned from the CCC project. The aspect of IP not materializing as a natural side effect due to a lack of targeted activities will be picked up again and elaborated on. Another aspect certainly is the fact that a cluster initiative the size of the CCC includes a multiplicity of partners and stakeholders, which leads to the engagement in manifold projects not all of which are relevant for IP. While it makes the project more blurry from a CopCap perspective and thus challenges targeted knowledge exchange, it ultimately also

raises the question if it is realistic to evaluate such a project with the same criteria as other IP activities, that is a narrow focus of job creation.

4.2.3 Evaluation and Lessons Learned

With the establishment of the CHC in November 2014, the next cluster initiative is under way at CopCap. Many of the learnings from the CCC project will hopefully be incorporated in the new undertaking. One measure to facilitate knowledge transfer has been to hire the Head of the CCC project for example to stay with CopCap and help develop new initiatives as the CHC.

Among the capital mistakes when starting the CCC project has without a doubt been the assumption that IP would just happen naturally as a side effect of the cluster initiative. After all, the CCC staff was somehow part of the IP department of CopCap: “And also when CCC was created it was thought that IP would be an indirect result of creating a cluster, meaning CopCap would not have to do anything to get IP cases. That was a mistake.” (Stephan, Head of the ICN). The main reason for this surely is that there were no activities in the project that allowed CopCap to do IP. Taken together, the aspect that no one in the project team focused on IP and the aspect that no activities implied IP, resulted in the fact that no IP took place really.

On a more general level, it is also true that CopCap’s focus on IP and the goals of a cluster might not be the perfect fit in the early days of a cluster initiative. The reason for this being that a successful cluster needs to create value for a multiplicity of stakeholders and project partners that transcends pure IP. Here, it becomes obvious that in order to generate and keep up the interest of the different local stakeholders and partners, a cluster initiative needs to engage in many different activities to create value for them respectively, CopCap being but one of them in the end. A key learning has thus been that there cannot, and as a matter of fact will not, be a focus on IP at the beginning, which has been very difficult to accept. However, one must not forget about the sheer size of the CCC project. In the end it was just a matter of getting started somehow and getting this big project with the many project partners involved under way.

In hindsight and especially with regard to knowledge management, it would have been helpful to have a better understanding of what each of the partners wanted to get out of the cluster cooperation and what contacts would have been of interest. Referring this to CopCap, many of the project partners didn’t know CopCap before the CCC project, and surely had no clear idea of IP. Consequently project partners such as DTU have not cared particularly much about IP as it is not a goal of their institution.

The next point then being how to communicate knowledge between the project partners. Here, e-mails and phone calls have been the main means: “But it’s very hard to share this type of knowledge on a systematic on going basis because you don’t want to create another online forum because people tend not to use too many of those.” (Stephan, Head of the ICN).

In terms of the Board, who is in the end taking final decisions for CopCap and is in dialogue with the financing regional authorities, it is worthwhile mentioning that they focus on the targets of how many new jobs CopCap efforts attracted. This also holds true for the case of the CCC, where the key performance index has been rather narrow on how many jobs were created and what where the investments that came out of the project. Given the fact that the CCC has had to service several project partners, each with their own subjective rationality, meant that the project had to pursue many broad activities, thus raising the question whether the narrowly defined targets were realistic from the start. Here the Head of Analysis notes that CopCap needs to be clear and honest in the communication with the Board in terms of expectation management.

In that regard the CEO of CopCap highlights that this aspect has indeed been among the main challenges: the execution of such broad projects, the communication with the Board and the communication with the politicians financing the activities of the organization. As an immediate result the activities have now been divided into three main areas in the new contract that has been negotiated in December 2014 for the next four years to come. In this new contract the first area comprises the core activities of attracting foreign companies, investors and talent, which are at the same time also the activities that can be measured and captured in numbers. The second and third area comprise activities that cannot easily be measured, yet are important to support the core activities in terms of building the right infrastructure in Copenhagen, which takes time and a lot of effort. A recent example here would be the CHC. A key learning from the CCC project has been that the initiative probably becomes interesting for IP purposes three to five years down the road.

Another good point made with regard to the lessons learned is the need for an exit strategy of the project, which did not exist for the CCC. It is basically like a start-up in the sense that it is a good idea to think about the exit when you build such a project as the Director of IP and Clusters underlines: “It’s like doing a start-up you have to start thinking from the moment you start how do I exit this? Who will fund it? Can it survive on its own? What does it have to produce to be so attractive that the market will fund it in a way?” (Marianna).

A recurring theme here also seems to be that while the employees at CopCap seem to be very enthusiastic about starting new initiatives, they are less so about finishing them properly. Thus,

an effort could be made in disseminating the learnings in the organization. In connection with this Anne-Katrine who is part of the Development team and has a lead role in the development of the CHC states that right now, it seems that they are going to repeat some of the mistakes made in the CCC. Again, there seems to be no exit strategy as the main goal has been to get started and get the most important partners on board. Also, no concrete activities that support IP have been identified yet. At the same time it must also not be forgotten, that while it makes sense to carry over some of the learnings, other aspects that have been relevant for the CCC for instance, might be entirely different and thus irrelevant for the CHC to mention one example.

On that note, the CHC has not been established as a project but as a program instead. This marks a turning point in the way CopCap is formally setting up its initiatives, which is certainly also part of the key learnings from the CCC project and will be analysed in the next paragraph.

4.2.4 The Problem with Projects

A central learning from the CCC project has been that a project in terms of a timely limited endeavour might not always be the most desirable set-up for an undertaking if it is supposed to become a sustainable organization that supersedes the set project timeframe. In the case at scrutiny here, there had been project funding for five years, which is a common timeframe for EU funded projects under the structural funds umbrella. However, this structure has proven to become a major burden for the activities that have been in place. First and foremost the problem has been that already on year four, no new initiatives or activities had been developed in prospect of the termination of the project within a time frame of one year, thus seriously hampering the dynamics out of the cluster. The fact that a lot of activities came to a stop or were slowed down towards the end of the project period proved to have a negative impact on the innovative drive of the initiative as a whole.

From an organization point of view, it also means that the employees engaged in the project will be looking for new jobs before the project actually ends. In a non-profit organization such as CopCap, operating under a tight budget, this might in fact jeopardize the successful completion of a project with the same quality as originally intended. This gap may also make it even harder to start looking for new funding to keep the initiative going. This argument ultimately boils down to a systemic problem related to the project-based culture, which is direct consequence of the common funding practices within Europe that has been cut down into project money. The Head of IP and Clusters states:

“And sometimes projects are like, you do the project to do the project, not to create something new or different or something that should survive or something new and innovative or you know. There is a risk there. So I am not a big fan of projects actually. Personally not... Because I definitely think that there is things you need to do longer than three or four years.” (Marianna).

Another novel aspect for CopCap has been to establish a cluster based on EU funding. In that regard the CCC was very political because it involved a lot of money and because it was financed by structural funds, which had serious limitations to the activities that were done under the initiative. One of them was that it was not possible to involve local companies in the activities of the cluster project. It has been possible to provide services for them, but not to actively involve them in the strategy of the cluster though.

In view of the many resources CopCap has invested in the execution of a project the size of the CCC, knowledge drain becomes a pivotal aspect linked to the project structure. As an organization CopCap is interested in retaining the employees and the created knowledge close to the organization. Especially when working with complex projects such as the CCC, that involve a large variety of stakeholders and where a lot of tacit knowledge and contacts were established, this knowledge drain becomes relevant.

The truth is, that it takes time to build a cluster and to build and maintain those potential knowledge pipelines that have been established in the course of the project. In the case of the CCC project, the decision was made to anchor the achievements of the CCC project in a member-based association. This step was completed in the Fall 2013 with some of the founding members kick-starting the continuation with considerable funding that is to secure the base funding of the cluster organization. In Spring 2014 the CCC merged with the national LEAN energy cluster. Together they form the new cluster CLEAN.

There is no doubt that the CCC as a social network can potentially be of great value for CopCap as a channel for the flow of knowledge that further facilitates specific interaction and enables knowledge sharing and knowledge exchange. At the same time it must not be forgotten that CLEAN as an organization is basically just the facilitator of the network and not the network per se. The next section elaborates on the role of clusters as a tool for stakeholder management and how CopCap organizes relevant partners in a strategic way.

4.2.5 Clusters as a Tool for Stakeholder Management

For the Team Leader of Development there is no doubt that the establishment of clusters is also a politically important engagement that runs parallel to the IP aspect. CopCap thus needs to know what is going on politically and what promises have been made in order to transform those vague political visions into something tangible that brings growth and employment for the greater Copenhagen area: “So I think that’s our second role. We have the IP role but we also have the role of turning political visions into practice and for that we need knowledge about the political visions basically.” (Rune). Consequently, the execution of cluster initiatives should also be viewed under this particular aspect in terms of organizing access to relevant political stakeholders in connection to e.g. the cleantech sector.

It is also in this context that the Head of Analysis admits, that even if there are doubts whether CopCap should continue working with cleantech (given that it is not the sector with most cross-border investments) it would seem strange if CopCap pulled out considering the political interests rooted here from both the Capital Region and the Municipality of Copenhagen. Hence, the cleantech activities of CopCap, need to be seen as part of a bigger scheme such as the ambitious climate goals and the target to become the first CO₂ neutral capital by 2015.

One specific example here is the conference that took place in May 2014 on smart city solutions. It was a great opportunity for the political stakeholders to meet international companies and learn about what they look for when settling in Copenhagen, what the latest trends in cleantech are and what the benefits are from having those international companies in the region. In that sense it has been a very strong tool to communicate CopCap’s worth to those that ultimately finance CopCap. Additionally the conference became a valuable opportunity for CopCap to showcase and present itself as a professional organization that is capable of executing such large events and further attract so many international participants.

Similar tendencies can be observed in light of the newly established CHC cluster, which is certainly politically motivated:

“They are very focused on the whole burden of the demographics and solving this issue, also the politicians really want to show that they’re doing something. So they really want to show progress and they really want to be in media and show now we’ve done this cluster and the companies love it, these kinds of things.” (Anne-Katrine, Project Manager CHC).

Another experience has also been to use each other as partners on trips abroad. This started out when the CCC called the ICN into life and the Director for IP and Clusters began to travel with the

City of Copenhagen and more and more people joined every time until CopCap decided to turn it around and invite the Lord Mayor to join on an IP tour. Through this collaboration of actively using each other and enrich the political purpose of travelling by IP activities, strengthens the value propositions of CopCap and backs them up politically, thus mutually supporting each other in the common goal of fostering economic growth.

Similarly the Region, that is the Regional Council Chairwoman Sophie Hæstorp, has now asked to plan a joint trip with CopCap to Japan together with the CHC. Thus, Marianna points out since the regional authorities are responsible for the hospitals it has made sense to engage in a healthtech cluster. It follows that the cleantech cluster is a tool to manage the relations with the City of Copenhagen and the Lord Mayor Frank Jensen, whereas the healthtech cluster is designed to be the tool to manage the relations with the Region. Traditionally it has been custom that politicians would travel with a business delegation for export purposes. For IP this is rather new.

However, the relevance of clusters for stakeholder management also holds true for other partners such as local research institutions like DTU. The technical university, which was also among the main partners initiating the CCC project, has proven to be important for knowledge sharing about companies that wanted to become part of DTU activities and projects. The cluster relationships make it possible for CopCap to engage with the foreign company beyond their participation in a specific project to the point where the company might consider setting up a Scandinavian headquarter or R&D facilities in Copenhagen.

In conclusion of this section it can be established that for CopCap, generating clusters is a way of generating partnerships and an active work relationship with local and national stakeholders and organizations. Being dependent on the expertise of partners to build concrete value propositions and a compelling business case for a foreign investor, this aspect becomes pivotal in terms of managing the flow of knowledge. As the former CopCap employee and cluster expert from Quercus points out, CopCap understands to place itself at the centre of the different stakes very well. What follows is a strong position as a network organization that fosters knowledge pipelines on an on going and diverse basis, which is remarkable considering the relatively small size of the organization.

As mentioned earlier the Copenhagen Cleantech Cluster has been through a dramatic process of transformation in anticipation of the terminating project period towards the end of 2014. While, the relation to the cluster as a social network, that is the members and stakeholders of CLEAN has been affected to a lesser extent, the case is certainly different as to the organization

CLEAN, that is the Secretariat of the cluster. In practice this means that CopCap does de facto not have much influence on the daily operations of the cluster organization, beyond their presence on the Board of CLEAN. The employees that were previously colleagues do not get to interact as frequently and casually as before and engage in common practices for the benefit of knowledge sharing and exchange. The next part of the analysis focuses on the cleantech cluster CLEAN and how the organizational change has affected its working relation to CopCap in view of knowledge management.

4.3. CLEAN

“But you know, building a cluster is something that you have to be in for in the long run and then also believe that the effects will be generated down the road. So I think basically, I mean CopCap should be able to also see all of the positive impact that CLEAN has today, CopCap can kind of take that into their own when measuring results and so on.” (Michael, Head of Business Development - CLEAN)

The abovementioned quote underlines that building a cluster is a long term investment, thus making it difficult to harvest the fruits in the immediate, which has been one of the key learnings of the CCC project. This is precisely why CopCap intends to continue having an active work relationship with the cluster organization, after it has been spun out. However, CLEAN finds itself just on the other side of a merger and has gone through a process of considerable organizational change after it has left the nest.

This section focuses on CLEAN and the transition it has gone through in the ambition to establish itself as the main interest organization in the local cleantech sector. This will be followed by an analysis of the fit between both organizations and where the potential for mutual value creation lies. Finally the challenges for future collaboration between the two will be addressed.

It becomes apparent that while both organizations have a strong interest in keeping a close working relationship new practices have to be developed in adaptation to the changing institutional frame. Especially from CopCap’s side a conscious and determined effort needs to be made in order to foster this strong exchange in future.

4.3.1 Transition and Organizational Change – The CCC becomes CLEAN

The CCC project ended at the closure of 2014. However, there is no doubt that the transition period began well before that. The foundation for this process of organizational change was certainly laid with the establishment of the CCC association in Fall 2013, when CopCap decided that the CCC should become an autonomous organization financed by its members. In spring 2014 the merger with the national cluster LEAN Energy Cluster based in Jutland followed. Together they form CLEAN. In August 2014 the CopCap affiliated part of CLEAN moved out of the CopCap office space into *Industriens Hus*, the new offices of the Confederation of Danish Industries, which is located close by CopCap next to City Hall.

In that regard the transition actually started before the merger. When it became clear that the project would end soon there was a need to redefine what they were doing. Now CopCap has as much influence as any other Board Member of CLEAN, the number of which increased significantly after the merger. The CopCap CEO does not however view this as an obstacle per se, as bringing in more partners also means to build a bigger and stronger organization. This point is further underlined by the aspect that CopCap itself decided to spin out the CCC, arguing that a member-based organization would probably be the best foundation for the cluster organization to be self sustainable in the long run.

One argument put forward in this context has been that the clear separation of CopCap and the CCC, also physically, allows CopCap to have a much more focused effort within cleantech, i.e. IP and job creation. At the same time it is also true that CopCap has reduced its activities within cleantech. Whereas before there has almost been an entire department dealing with cleantech projects and that had knowledge about cleantech, there is one Business Development Manager left doing cleantech in CopCap now. This clearly shows the trade-off because even if there had been many more cleantech people in CopCap before, they were not necessarily engaged in CopCap's core activities, which is to create jobs. As the IP consultant in cleantech for CopCap mentions, it has always been difficult to understand and felt weird. Somehow the CCC people were part of IP in CopCap but they were engaging in various activities that did not directly benefit IP.

At the face of this it seems that acquiring the relevant knowledge has thus become a bit more difficult after the transition as interaction has become more formal. The Head of the ICN Secretariat assesses the situation as follows: "So in terms of getting the knowledge, it has become a little harder but as long as those people are in the two organizations there will be continued exchange. What will happen when those people are no longer employed in both organizations I

don't know.” (Stephan, Head of the ICN). Now that CopCap and CLEAN are two separate organizations, the personal relations between the employees that used to be colleagues before becomes critical to profit from each other's knowledge through engagement with the social network that makes up the cluster.

Additionally a main concern has been that in the short term there might be a conflict of interests between the focus areas of CopCap, which wants to service companies that are not yet located in Copenhagen, i.e. potential competitors and CLEAN, which has a local member base it needs to create value for. In the long run competition is desirable in terms of knowledge creation and innovation. But for now individual companies might perceive it as a strong conflict of interest or as a threat even, in any way not what they are paying their membership fees for.

Speaking to the cleantech consultant in IP, there is a strong interest of actively using CLEAN in future though. However, she mentions she needs to understand their future strategies and their new set-up better in order to do so. Right now CLEAN needs to come to terms with the grave organizational changes that have shaken up their organization and find a new sense of direction. In general she is confident that the transition will lead to better opportunities of cooperating with each other, as there will only be joint activities when there is a strong case for it because now you need to have a specific question when you call them as she puts it.

From an external point of view, the Head of Development from CLEAN introduces two main arguments here. On the more positive side the project portfolio of CLEAN has become much bigger, meaning that the cluster is de facto able to develop more value propositions and generate more value for foreign companies. At the same time the transition also means a loss of influence for CopCap in day-to day business, as the informal meetings at the coffee machine or at the Friday bar fail to appear, thus underlining the point made earlier. There could be a challenge for CopCap on how to use the cluster on a daily basis in very practical terms: “For instance myself I am not employed by CopCap anymore. So I do not have to deliver value for CopCap on a daily basis as I did before. The way I think this working relationship should function is that CopCap should keep or maybe even expand the daily relationship with us.” (Michael, Head of Development - CLEAN).

Cluster expert Nikolai from Quercus, is sceptical about having a national cluster, which does not fit the definition of a cluster, traditionally defined by the geographical proximity of the actors involved. On that note he accents that each region has its special needs and strengths that might differ strongly from one another. The Municipality of Copenhagen for example has also become nervous about the transition, especially after the name changed and does not include the word

‘Copenhagen’ any longer. The Region of Sealand, being the poorest region in Denmark is further afraid about its loss of influence now that it is only one out of five regional authorities that have a stake in the cluster. In that context, the role of CopCap becomes extremely important in order to agitate for the interests of the Copenhagen region in CLEAN. This appears even more relevant keeping in mind that the Copenhagen brand has a very strong international appeal with regard to cleantech, which is not the case for Denmark to the same extent.

Nevertheless, the role of CLEAN in the cleantech ecosystem in Copenhagen is more important than ever, as the next section will underline.

4.3.2 CLEAN and the Cleantech Ecosystem in Copenhagen

There is no doubt that CLEAN plays an enormously important role in the local cleantech ecosystem in Copenhagen. As such they have managed to become the strongest player within cleantech and have been chosen as the key strategic cluster for green projects in Denmark as a gold certified cluster in the EU, which also gives access to funding within the EU. Suddenly CLEAN is part of the national strategy that foresees to have 10 gold certified clusters in Denmark, one in each sector. The position the cluster has secured itself not only in the local but also in the national cleantech ecosystem is thus a very tangible result of the CCC project, both the Capital Region and the Region of Sealand take pride in nowadays.

In spite of the fact that both Regions had trouble seeing the value of the CCC project in the very early days, they see CLEAN as a very strong tool for the implementation of their policies today. The Lord Mayor travels together with employees of CLEAN and also from CopCap to present the ambitious climate plan his city has formulated and thus brand Copenhagen as a green capital, which supports IP greatly. In this context CLEAN as the cluster initiative does support the cluster in operating more efficiently by binding together the relevant partners from companies, research institutions and public authorities. So the City of Copenhagen and the Municipality want to use CLEAN as the main platform for green initiatives.

By now CLEAN leads the largest cleantech projects and is likely to increase its political influence in the years to come: “And whenever the region, whenever some of the political players they think cleantech, they think CLEAN.” (Rune, Team Leader Development). The strong regional integration, resulting in CLEAN being the meeting point of the actors in the eastern part of Denmark and the one-stop shop for acquiring local cleantech knowledge is further underlined here. It follows that whenever strategies are implemented at the City Hall, CLEAN is a part of it. They

create new projects, receive international delegations and create reports of green sectors and opportunities in the cleantech sector in Denmark.

By now CLEAN has actually reached a critical scale in its activities. In total the organization counts 42 employees, which is comparatively big for a cluster organization usually having three, five or eight employees at a maximum. The sheer size of CLEAN means that a much bigger project portfolio can be nurtured, which is a strength in itself especially keeping in mind that every paying member and all the stakeholders have a number of different things they would like the organization to do. Simultaneously it enables the cluster to have scale in their operations, skills and staff, thus making it easier to work across projects and get more value out of the individual projects.

It is precisely here that the CEO of CopCap sees one of the core functions of CLEAN that is match making of both national and international companies that want to be part of a specific project. He sees the cluster as the body that can connect the different stakeholders. In order for companies wanting to be part of certain projects however, he stipulates the drive of innovation to be among the main tasks of the cluster. In practice this means that CLEAN needs to engage public authorities and private partners into ambitious innovation projects, to develop solutions that are cutting edge and leading the world so as to have this strong magnetic effect that places Copenhagen at the centre of gravity of the green revolution.

At the same time CLEAN has a very strong international presence. The C40 network, which is a group of the world's 40 leading megacities including New York, Rio de Janeiro, Mumbai, Tokyo and Lagos that try to find solutions to reduce greenhouse gases as they are mainly emitted in cities, is one example. Here Copenhagen as a comparatively small city is among the nine cities being on the steering committee and has recently been asked to lead the green track in the C40 cooperation. CLEAN has a big impact here, which can further be of particular value for CopCap and IP as well. The cluster organization thus helps CopCap to tell the story and develop the story of Copenhagen, thus marketing the region as a green frontrunner globally.

One example where this has become very clear has been during the smart city expo in Barcelona, where CLEAN brought along a large Danish delegation and organized the Danish booth. Here, the cluster organization played an important role in bringing the relevant partners together such as Danish companies, the Municipality of Copenhagen and representatives of the Danish Architecture Centre, which sends a powerful message in terms of how those local actors interact with each other. At the same time CLEAN shows that they have an overview on all the smart city related activities.

The cleantech responsible in IP further echoes this argument by mentioning that CLEAN knows their members so well that they can just approach foreign companies and match them up on the spot, which can potentially also benefit her work to a large extent: “Ok, we have this company, they are doing membranes for water metering. Can you use that?” and then the company said, “Yeah that is just the solution we are looking for. Bring them on.” (Djouhara, Business Development Manager - Cleantech).

To sum up this section, it seems that the Copenhagen brand is stronger than ever when it comes to cleantech. This is without a doubt one of the main achievements of CLEAN. For CopCap the strong presence of CLEAN also means that there is a wide range of supporting activities that the IP agency no longer has to do as they have been outsourced when the CCC project became an organization of its own so to speak. This enables CopCap to focus on its core business again. At the same time it also brings up the question of fit between CopCap and CLEAN, which will be the subject of the adjacent paragraph. Among the central issues will definitely also be how to access the knowledge that is relevant for IP within cleantech in future.

4.3.3 The Fit between CopCap and CLEAN

The antecedent paragraph has established that both CopCap and CLEAN have an interest in promoting Copenhagen as a hub for cleantech. From a CopCap perspective, having a specific stronghold makes it much more interesting for a company to locate in the respective and thus have access to suppliers, talent and knowledge networks. Being able to transmit the CopCap story tied into the CCC, thus talking about the regional strength and share knowledge about the opportunities and partnerships in the particular sector, has been a very convincing strategy in terms of IP.

In that sense there is a clear match between the activities of CopCap and CLEAN for as long as the latter has a focus on internationalization as some of the projects have clearly been of interest for foreign companies. In that instance there is a fit, when there is a shared goal that is related to inviting foreign companies such as to bid on a tender. One example here is that both organizations partner up for the purpose of international branding like it has been the case in Barcelona.

The Head of Analysis on the other hand claims what matters even more so, is that both organizations need to know the same things, in the sense that CLEAN might have knowledge on a specific niche or cleantech area than could be equally relevant for IP purposes: “So you could say the knowledge base of both organizations there is a big overlap of what we know and what we

should know regardless of what we want to achieve in the end.” (Klaus, Head of Analysis). Here CLEAN can be helpful to prepare for fact-finding missions for foreign investors.

On a more operational level CLEAN can be very helpful to introduce potential IP leads to the local cleantech network, thus being the one-point entry to the 174 members of CLEAN. Especially when a foreign company is still at an early stage in their decision process to open up offices in Copenhagen, the cluster organization can provide a solid overview of the local circumstances while connecting them with the relevant partners to join in on a project or provide a specific technology the municipality has been looking for. Especially in cleantech where attracting foreign companies is very difficult, it is very important for there to be a concrete project, partner or business opportunity for the foreign company.

From CLEAN’s perspective there should be a clear division of labour where CLEAN supports CopCap in constructing very concrete and tangible value propositions. One example is that CLEAN is in charge of executing tender projects for the City of Copenhagen: “So there is some money on the table, there is a customer, for instance the city, looking to procure some sort of clean solution, representing a very concrete opportunity for a foreign investor.” (Michael, Head of Development, CLEAN). A recent case that reflects this statement has been the attraction of the French company Citylum, which will open offices in Copenhagen after winning the tender for renewing the lightning infrastructure in Copenhagen in a green way.

Cluster expert Nikolai has observed a transition in the fit between CopCap and CLEAN now that the cluster has become a member organization. Before there had been a clear fit, being that CopCap wanted to attract companies and needed to know more about the product and tell the story of Copenhagen as a green hub for lead generation. Now that CLEAN has become a national cluster, the strategic focus and the activities they have laid out in future seem to have become much more national as well, which might further blur the fit between both organizations. Here Michael from CLEAN mentions the importance of keeping the strategic alignment between both organizations in order for CopCap to keep on benefitting from having built the cluster.

It is precisely here that opportunities for a future cooperation could arise. Thus some of the benefits that could come out of having established the CCC and having had them in house relate to the access to international stakeholders but surely also staying close to the Danish cleantech community. Here, CopCap needs to show that they are a serious addition to the cleantech community and hence position itself both nationally and internationally by staying close to CLEAN. In agreement with this argument great opportunities may materialize viewing that the pie

is bigger now as CLEAN has significantly extended its project portfolio. In that regard CopCap can potentially be exposed to much more relevant knowledge, the challenge lying in getting access to that knowledge and grasping it. This is exactly what CopCap should be focusing on with respect to interacting with CLEAN, i.e. how to access the knowledge that is relevant for IP within cleantech.

In general CopCap can also play an important role as the international marketing arm of CLEAN, bringing in companies that want to be part of CLEAN and their cutting edge innovative projects. In that regard the fit really goes both ways in the sense that the cluster helps build the product, that is knowledge and expertise wrapped up in a value proposition that CopCap then uses to approach foreign companies to sell in the ambition to attract them to Copenhagen. Ideally CLEAN can then facilitate connecting the company locally by introducing it to the local network and matching them up with the right partners and eventually become a paying member of the cluster organization. The next section takes a close look at the value of CopCap for CLEAN.

4.3.4 The Value of CopCap for CLEAN

According to the Team Leader of Development this is where part of the problem lies. Given that CLEAN has moved away from IP he is sceptical if CopCap can give something tangible back to the cluster. A future scenario for working together could be to instead of directly working together, work on something that can benefit both organizations even-handedly. He mentions a previous effort of building a joint value proposition on test and demonstration facilities for clean technologies in the Copenhagen region that could be used by foreign companies as well as local companies for example. Unfortunately it has turned out that the test and demo facilities are very research focused and thus not apt to be used or marketed for commercial purposes.

Other voices within CopCap believe that there are actually several things the IP agency can do for CLEAN as CopCap is promoting the cluster organization internationally by using it as a value proposition and by this eventually also attract new members to the cluster. Hence, CLEAN is invited to present themselves to delegations coming to CopCap where it makes sense and could be of relevance for the cluster. This opinion is further echoed in the sense that CopCap, as a very professional IP agency has a project and network mindset of connecting people, which can be of great value. Also looking at it from a more general perspective clusters should have an interest in attracting more companies, which should not only be viewed as potential competitors but as potential partners for cooperation and competing at the same time, i.e. ‘coopetition’:

“And hopefully CLEAN doesn’t forget that because CopCap is doing a very great job for even for the whole of Denmark with the professional people there. Because this is what creates GDP and jobs. I mean this is probably the best contribution to job creation in a cluster and the fastest way. So that’s the value prop for CopCap.” (Nikolai, Director and Founder - Quercus).

Speaking to the Head of Business Development from CLEAN about that aspect, revealed that he is personally very much in favour in CopCap influencing the activities of the cluster more actively, in order to make sure that the international part remains on the agenda of the organization. Given the fact that 95 per cent of the members focus on more national projects he claims it is easy to just focus on the national cluster activities, thus forgetting about internationalization in the greater scheme of things. For him, this part is nonetheless vital for a strong cluster as it is important for some of the members such as CopCap after all.

He also believes that the international focus is something that sets CLEAN apart from other clusters and would thus be a shame to lose. The relevance is further endorsed by the fact that to be successful most Danish companies have a need to market their products internationally in light of the small home market. In that respect CopCap becomes a key strategic partner to help those members of CLEAN that need help internationalizing, as they might not have the financial resources to do it on their own.

So far the analysis has established the relevance of CLEAN as a strong player in the local, national and international cleantech ecosystem on different levels. Despite the question of fit, previous paragraphs have also shown that both CopCap and CLEAN have a strong interest in keeping a mutually beneficial working relationship. However, no one really doubts that there are also challenges to this ambition especially in regard to re-defining and re-negotiating how the two organizations should be connected in future. The relevance of this becomes even more uncanny thinking about the implications for knowledge sharing, knowledge exchange and how to create a framework that positively influences the flow of knowledge for the benefit of both organizations. What has been mentioned between the lines regarding expected challenges will be addressed more openly in the next section.

4.3.5 Challenges for Future Collaboration

There seems to be agreement about the fact that the biggest challenge will be to find a common ground to work from in future. The Smart City Expo in Barcelona is a recent example of where this seems to have worked out well. Both the cleantech consultant and the consultant for the Chinese

market from CopCap have been part of the CLEAN led delegation. But there is no doubt that defining those activities that align CopCap's and CLEAN's interests alike, will pose the main challenge. Here the Director of Clusters and IP puts forward that planning common activities is something that needs to be institutionalized, meaning that it should be rooted more firmly in how CopCap and CLEAN interact with each other, thus going beyond the good personal relations between the employees of both sides. Failing to find this common ground is likely to lead to them being two separate organizations acting on their own.

According to the Head of the ICN Secretariat, the reason for this is that it has been one brain before as CopCap and the CCC have been the same organization, the same department even. Now they are two brains that are not necessarily synchronized. However, he clearly sees the responsibility for keeping up an active relationship with CLEAN on CopCap's side. CLEAN is involved in many activities that put forward a lot of knowledge that could be relevant for CopCap but it's up to CopCap to see value in it.

A more general challenge seems to be for CopCap to develop clusters that keep having an IP focus once they become a self-sustainable organization. While there is no doubt that a cluster is very helpful for IP purposes, the problem here is that nobody represents those stakeholders that are not cluster members, such as foreign companies. Thus, especially the CopCap management hopes that CLEAN will keep on being an open and inviting platform that allows for collaboration with various partners that are interested with the ambition to be world-class. The example of Medicon Valley has shown what happens when clusters narrow their focus strictly to their members as they become very uninterested in talking to some of the companies CopCap is trying to attract to Copenhagen or develop collaborations of some sort. The pharmaceutical cluster was equally born out of a CopCap initiative in the 90's.

Keeping the example of Medicon Valley in mind, CopCap's CEO adds that the members of CLEAN should in his eyes be careful what they ask for. He believes that only initiating locally focused projects might be a successful strategy in the short run, but is likely to fail developing an innovative cluster that tries to raise the bar constantly. This highlights yet again the role of a cluster organization as being the driver of innovation and development to make sure its members keep being among the best:

“So CLEAN should have a strong international ambition also to attract the best talent, the best capital, the best investors and the best companies to come and take part in the development here. If they can do that then they can win. If they fail doing that, if they only

attract what is best in Denmark, we will only be Danish champions, not world champions.” (Claus, CEO CopCap).

Ultimately it will be a question of how CLEAN sees itself and its role in the cleantech ecosystem in Copenhagen. There is a risk of the cluster organization becoming too big and important as to forget about the philosophy that has backed up the CCC project: to be an agile player in the geographical cleantech cluster, with its sensors in the field that is in contact with the small companies and has a good overview of what is stirring up the cluster. And again the aspect that CLEAN has become a national cluster is one of the main issues here.

The situation of both organizations moving into different directions with CopCap focusing on IP and CLEAN focusing on the national part of the cluster calls for decisive action to secure the alignment of interests in future. In this regard CopCap should not underestimate its influence it de facto still has. Also the fact that there are international activities at CLEAN, which also has staff in place solely responsible for international activities that should ideally keep on having a strong working relationship with CopCap in future plays a role here.

Finally it would require CopCap to constantly engage with CLEAN and push for a direction that creates value in terms of IP: “But it doesn’t come by itself you know. You have to be constantly engaged to constantly push us to work in a direction that is of value for CopCap because the foreign direct investment part of what we do can easily evaporate or just disappear.” (Michael, Head of Development - CLEAN). Keeping in mind that CLEAN is member driven, the best way for CopCap to make sure their interests are served, is to be an active part of the organization and make a strong case for their own needs on the Board of Directors, in the different working committees and whenever they can have a say.

Despite some international activities at CLEAN, the Board of CLEAN is not really internationally focused. With his strategy view the Director and Founder of Quercus states, the result is an international department that has become somewhat artificial. It is separated from the remaining employees at CLEAN that are the ones that actually work with the companies and have an overview of what is happening in the local cleantech sector. It follows that the international team does not have the expertise in biogas for instance and they do not have the network and the feeling for this particular area. What matters more would be to have an international mindset integrated in the cluster organization as a whole instead of having a small, secluded appendix that is running the international activities detached from the rest.

The international activities thus need to be part of the core strategy of CLEAN, weaved into the organization instead of a secluded pool of activities. On the Board this aspect has been debated as part of a strategy workshop and needs to be worked out in more detail. Still, it must not be forgotten that CLEAN is just on the other side of the merger, thus still in the process of figuring things out. It becomes apparent that the international part of the future CLEAN is still unclear and not yet properly defined. In that regard the following can be concluded: “So should it be that they don’t have an ambitious plan within the international area I don’t see a proper fit and I don’t see the two organizations working a lot in the future.” (Kanval, Business Development Manager - ICN).

In sum, CLEAN will continue having international activities, such as delegations coming to learn about the climate plan or specific cleantech areas in Copenhagen, even if the concrete international strategy is still rather vague. As long as the employees at CLEAN know what CopCap does they will involve CopCap to come and talk to those international companies. Hopes are that the good working relation between the two organizations is kept alive and that neither forgets about the low-hanging fruits as good results have been achieved, which can be seen in the fact that the CCC project has attracted 13 companies to Copenhagen after all.

4.4 Concluding the Analysis

For various reasons that have been laid out in the analysis, both CopCap and CLEAN still have considerable interest in working closely together in future. Though hampered by the organizational restructuring of the cluster organization CLEAN, there is no doubt that the cluster, as a network that goes beyond the Secretariat, plays an important role to channel sector specific knowledge on cleantech.

CopCap is interested in using the cluster organization to build compelling value propositions in the ambition to attract and retain foreign companies to the Copenhagen Region. Working together with CLEAN then ultimately also relates to acquiring the different types of knowledge that are relevant for IP as laid out in section 4.1.1 of the analysis. This is mainly the case for knowledge about the local cleantech sector and opportunities in the home market, but also for case specific knowledge on what would trigger a specific foreign company to locate itself in Copenhagen. The knowledge base is not however limited to the cluster organization itself and includes CLEAN members and partners of the local cleantech ecosystem at the same time.

There is no doubt that from CopCap’s perspective it is really about getting a return on investment, keeping in mind that it takes time and resources until you build a well functioning

cluster organization that is powerful enough to cause a stir both locally and internationally. However, having an active work relationship between CopCap and CLEAN is certainly just as desirable from the perspective of CLEAN because of the strategically important position of CopCap. Among the main challenges here is the issue of finding a common ground to work together in future. This is right now still complicated by the fact that CLEAN has been through a dramatic change process since last Fall and finds itself just on the other side of the merger with the national LEAN Energy Cluster based in Jutland: “So definitely we want to keep and even expand on the working relationship with CopCap. That would be great. It’s just a matter of finding new roles for both parties’ natural division of labour.” (Michael, Head of Development - CLEAN).

It becomes clear that, while both organizations used to be very close, “one brain” as one of the interviewees pointed out, they are now two brains that are not necessarily synchronized. This is without a doubt also true for the employees of both CopCap and CLEAN, most of which have been colleagues before, sharing the same office space. Informal meetings at the coffee machine, during lunch breaks or at common social gatherings such as Friday bars or summer parties fail to appear without any conscious and extra effort. But also formally the fit between the two organizations seems to have faded away to a degree. When the CCC project was still a part of CopCap there had been clearly defined international activities and IP was at least formally an element of the cluster.

However, the interviews have also shown that the current situation must not be seen as a problem per se, as both organizations can now focus more on their core businesses. For CopCap it also means that CLEAN is now doing many activities that CopCap does not have to do anymore, such as international branding and engaging with the local cleantech front-runners. The problem then is more about how to actively align both organizations to enable knowledge sharing and knowledge exchange for the benefit of either.

In terms of knowledge management for CopCap the question in terms of knowledge management then becomes how to cultivate the access to knowledge that is relevant for IP in future? What are the implications for knowledge sharing and knowledge exchange? And last but not least to what extent are the employees of both organizations engaging in practices of knowledge sharing?

5. Discussion: Drifting Frameworks and the Implications for Knowledge Management

The following part is a discussion on how the carefully crafted knowledge pipelines have been shaken to the core as a consequence of the changing institutional framework when the CCC became independent from CopCap. In doing so the case specifics will be contrasted with relevant theories on knowledge management in the knowledge intensive firm as laid out in the literature review. The purpose of this is to shed light on the most pressing questions revolving around the topic of knowledge management in CopCap with regard to the cleantech cluster CLEAN.

Managing knowledge work in the knowledge intensive firm now focuses on nurturing enabling framework conditions that have a positive impact on processes and practices of using knowledge for particular assignments and purposes as pointed out by Swan et al. (2009). The authors further highlight that networks play an important role in translating and transferring knowledge between groups and across contexts. At CopCap this takes shape in the form of value propositions, which are tailor made business cases to attract foreign investors. It is here that the connection to CLEAN becomes particularly valuable.

It follows that in the knowledge intensive firm, management has the strategic autonomy, while the knowledge worker who enjoys discretion on how to organize his work on a daily basis has the operational autonomy. In line with this distinction, the discussion is divided into two main parts. The first part discusses the informal network relationship between the employees and former colleagues and how they see the engagement in practices of knowledge sharing and knowledge exchange on an operational level. The second part on the other hand discusses the formal network relationship between the organizations CopCap and CLEAN in terms of strategic alignment as fostered by management.

The discussion ends with a section on the implications of the items laid out here. As outcomes of knowledge sharing are dependent on the fit of tasks, actors and contexts and how these come together at a specific point in time (Swan et al. 2009), it becomes clear that the basis of interaction needs to be re-negotiated.

5.2 Informal Networks – It's between People

The following section deals with the relationship between the employees of CopCap and CLEAN. It will be interesting to look at what has changed in terms of how the employees of both organizations

interact with each other. From a CopCap perspective it seems that now they have become two separate organizations, the personal relations between the people that used to be colleagues becomes even more crucial to get access to the knowledge of CLEAN.

Given the importance of active networking as a tool for constructing knowledge in a dynamic and ongoing process, the following quote by the Head of Analysis gains momentum: “I think we should try to think ahead, think in a long-term perspective on how do we plan if we assume that the initiative will be a success that will keep on living. How should the relationship be between us and them once it becomes them in the long-run?” (Klaus, Head of Analysis).

Parallel to the relation between the two organizations it will thus be important to keep strong ties between the people working with cleantech related areas in CopCap and the people at CLEAN, which will be very dependent on the people themselves. The previously mentioned aspect of operational autonomy that rests with the knowledge worker enters the scene (Swan et al. 2009). Thus, knowledge workers enjoy a great deal of autonomy and freedom to organize and decide about their work practices regarding how they do their tasks. This is certainly also the case for knowledge sharing, which is a voluntary behaviour that cannot be mandated by rules and procedures. The only control mechanisms left in terms of management thus becomes a supportive organizational culture.

The Head of Department of IP and Clusters underlines that among the investment managers’ crucial tasks is to know who is in their key network and how can they maintain the network respectively: “So part of the job is in a way to work your Danish knowledge base and then a part of the work is to work abroad and find clients and make that match.” (Marianna). This argument additionally highlights the embeddedness of knowledge in social relationships and interactions as proposed by the community-networking model introduced by Swan et al. (1999). At the same time the role of dialogue and sensemaking through active networking in constructing knowledge is underlined. Here knowledge needs to be re-created and re-constituted in a continuous and dynamic networking activity that is of an interactive and social kind.

It is in that particular context that it was interesting to bring up the general scepticism towards knowledge management systems that seems to prevail in CopCap and as pointed to in 4.1.2. Here it becomes apparent what is meant when talking of CopCap as a network organization, where social and personal interaction is a key resource to organizational performance. The example thus showed the frustration some people have experienced with different tools that have been tried out. Knowledge management through IT thus stands at a stark contrast to knowledge management

through social interaction organized through networks for example, the difference being it's between people.

5.2.1 The Relationship between the Employees of CopCap and CLEAN

According to Swan et al. (1999) networking promotes knowledge sharing through social communication processes and can hence be understood as boundary-spanning activities of how individuals get hold of knowledge in practice. Assessing this as being a central aspect that characterizes the relationship at hand, it can be said that while originally the staff of the CCC project, and CopCap shared practices, they have now drifted apart in the sense that they have developed distinct practices. Based on the assumption that knowledge sticks to practice, it stands to reason that knowledge sharing is becoming a more difficult exercise in itself. New practices need to be developed, for the knowledge to be shared successfully. This is further linked to the argument that sharing common understandings and meaning/belief systems greatly facilitates knowledge sharing:

„Because in the CCC example. You put a lot of people together who work at different organizations. They all get the same identity. They are part of the same group. The CCC group as it was called back then. So they have a shared identity, meaning that you interact, have a personal relationship and they are willing to help each other because you are in the same boat.“ (Stephan, Head of the ICN).

Comprehending networks as communities, thus endorses the significance of social networks as frameworks for knowledge sharing as the community forms their thoughts and actions (Swan et al. 2009). Following the dichotomy introduced by Swan et al. here, it could thus be claimed that when the CCC project was still an integral part of CopCap, the cleantech people of the IP department have been like an internal community. The employees forming this community have been a closed structure that shared an identity, a feeling of shared goals and shared practices in order to support ways of knowing and shared learning. As mentioned earlier this has at times also been very difficult to understand by some of the other employees of the IP department. Even more so because the CCC project has been engaged in many activities that were not necessarily directly linked to IP, i.e. contributing to the creation of jobs and meeting CopCap's targets.

And the employees also played with it, meaning that sometimes they would put on the “IP hat” and at other times they would wear the “CCC hat”. In practice, the employees of the cleantech department, some of which were hired as consultants for IP and some of which were hired for the

CCC project, even had two different types of business cards that they could draw depending on the audience. This has fundamentally changed after the CCC has become autonomous. Now, it makes more sense to talk of a channel network that is rather open and built around individuals, who are connected through personal ties.

In that connection the IP consultant for cleantech sees the task on her table to get closer to the work of CLEAN as they hold a lot of expertise that could be relevant for her: “I see the important task for us is to share knowledge. As investment manager, we are the facilitators of knowledge. We need to have the overview and see which Danish stakeholders do we have, which leads do we have and then share knowledge with them.” (Djouhara, Business Development Manager - Cleantech). Endorsing the people aspect, she further highlights the importance of figuring out who you have a good chemistry with as it increases the ease of interacting with other people. It is in the active use of each other’s knowledge and competences that the personal relations become important.

It has in addition been argued that the most valuable knowledge is exchanged in social gatherings such as Friday bars or hanging out after an event between people that have a degree of trust. It is very context specific knowledge that reaches the surface in the course of a conversation and cannot be put in a bottle or productized as the Head of the ICN states. In this regard fostering social encounters needs to be a focused ongoing activity. First and foremost since the employees of both organizations are moving on to new things, chances are that within a year it will be new people having to talk to new people. It means that a new base for how knowledge is shared and exchanged is a likely scenario and might lead to more formal relations, which must not necessarily be seen as a counterproductive development.

Here the distinction between strong and weak ties as proposed by Granovetter (1973) might help us understand this situation better. One could thus claim that while the ties between the CCC and CopCap have been stronger and based on trust more so than they are between CLEAN and CopCap, the likelihood of CLEAN being a source of new knowledge has increased. As it has been put by one of the interviewees „now the pie is bigger“ as CLEAN is exposed to more valuable knowledge even if their capacity in transferring and exchanging tacit knowledge might have decreased.

Nevertheless, as the Director of IP and Clusters has pointed out earlier, solely relying on the good personal relationships is not enough. Especially since employees are not going to be the same, she underlines the importance of institutionalizing how the people of CLEAN and CopCap

should be working together in future and somehow make it part of the DNA of the employees. This is further endorsed by the Head of Development who believes that while personal relations are good, this is not where it starts: “So I think that would be hooked up to the projects and I think if we develop a joint platform for us to work together. You know, we will go to their Friday bars and you know, we will build up as we move on. But we need more professional reasons to meet.” (Rune, Team Leader Development).

The role of carving out common activities is thus an important element of how CopCap and CLEAN should be working together from now on. One, there is a shared goal under which the needs of both parties can be met and also the employees of both organizations get to spend time together as the Head of the ICN underlines. Building something tangible such as a joint value proposition as a framework for social interaction thus seems to be a crucial point here to foster and institutionalize the relation between the people in the long term. Considering that CopCap and CLEAN are now two separate organizations will require a closer dialogue and more conscious effort as cluster expert Nikolai underlines: “Now it’s different addresses and it would require that you more actively take meetings, coordination, dialogues even workshops maybe and even do joint things, even join each other on trips to combine different things.” (Nikolai, Founder and Director - Quercus).

It does seem suitable to enrich this statement with theoretical considerations of Brown & Duguid (2001), who remind us that too often the emphasis lies on community and not on the implications of practice and a sociocultural view of learning and knowledge. Looking at knowledge through the prism of practice and the way work is done, thus promises to get a better idea of how knowledge is created. Shifting the focus to how things are actually done would further endorse the fact that a firm’s knowledge base is not a property that falls within its boundaries, but one that in parts draws on its embeddedness in broader structures. Recognizing the roles of both organizations as two important players in the Region of Copenhagen, i.e. CLEAN in the cleantech ecosystem and CopCap as a well-connected network organization, makes this point even more relevant in this case.

Leaving no doubt that a crucial element of knowledge sharing is to see it as an activity, the Head of IP and Clusters further accents the importance of attitude. The experience with Medicon Valley has shown that it also depends on the willingness to work together and see value in this respectively. The CEO of the pharmaceutical cluster organization does not personally see the value in working together with CopCap. Here, the personal aspect does not work as a door opener as the cluster management simply does not want to collaborate. Bottom line, it is about the people really.

In the end it will somehow be up to the individual to nurture an active and good working relationship with the relevant counterparts in the other organization respectively. Looking at it from the perspective of CLEAN, having a close and daily contact with CopCap enables the Secretariat to understand what it is the specific member wants and how CLEAN can generate value for them. From his experience the Head of Business Development of CLEAN states, those are the members that get most out of being part of the cluster organization.

In terms of HR, CopCap as a network organization sets great store on hiring the right people that fit into this “network thinking” and creating synergies both within the organization but also with partners from outside. The aim has thus always been to create a culture of talking and discussing in plenum, sharing and exchanging knowledge in the open. Bringing employees with the desired state of mind and motivation to the fore, thus emphasising more subtle and invisible control mechanisms, certainly plays a role in CopCap (Kärreman & Alvesson, 2009). This aspect is yet again tightly knitted to the operational autonomy of the knowledge worker.

Finally it is also worth mentioning that the cleantech consultant in IP has emphasized that the more we talked about the topic, the more she realizes how important knowledge sharing and nurturing a good relationship to the relevant employees at CLEAN actually was for her work and her performance. In that sense she enjoyed the interview as it gave her a forum to actually think about those aspects. Reflecting is something she does not usually have time for in her everyday work, where you just take it day by day and do the things you are used to do, she explains. Especially in CopCap where resources are always scarce and it is really learning by doing and making your own experiences because there is no one there to teach you. This autonomy is good in some cases she further explains, but also challenging in other cases:

“No because here in CopCap it’s pretty much, you are pretty much on your own. The employee can decide whatever he wants... Yeah, so it’s up to you. Do whatever you want. In some cases it’s good but in some cases it’s also frustrating because you can just run around all the time and work for 80 hours a week and just yeah.” (Djouhara, Business Development Manager - Cleantech).

In that regard having a clear strategy, would also assist the IP consultants in terms of giving a sense of direction and by this support the ambition of fostering a good relation with CLEAN. As the founder of the cleantech department, Nikolai from Quercus points out, that this is where management becomes key in terms of communicating the strategy. This regards the way the organization works in terms of practices, thus further emphasizing the role of taking relevant partners and networks along and integrating them in the work processes. The importance of

management additionally being to make sure the strategy is actually implemented and lived and does not end up as a document, leading us to the next section of the discussion.

5.3 Formal Networks – It’s between Organizations

There is no doubt that CopCap cannot not work with CLEAN if they want to stay active in the cleantech community in Copenhagen. This would thus require CopCap to foster an active relationship with the cluster organization. At the same time it is also true that CopCap has scaled down its cleantech ambitions significantly. However, as pointed out earlier it might be good that management has taken an active decision to spin out the cluster initiative, which also creates security as well as a clear and decisive sense of direction for the future. In terms of IP it means that CopCap will have a limited but at the same time more strategic focus within specific cleantech areas and target companies within that range.

Nevertheless, when the CCC was still part of CopCap the strategies were naturally aligned and thus facilitated the creation of knowledge. The CCC receiving international delegations for example went hand in hand with IP, resulting in the fact that the organizations have been very close. Now CLEAN focuses very much on the local and national cleantech ecosystem in the ambition to create value for the paying members. To date IP is no longer a concern for the cluster organization and the international activities are not clearly defined yet. As a direct consequence the question of fit between CopCap and CLEAN is raised for the time being, which has been identified as one of the main challenges: “Well, the thing is, if we in any way could make sure that once we let go of the initiative that they maintain this focus on IP. And I think that’s very very difficult.” (Djouhara, Business Development Manager - Cleantech).

It became clear from the interviews that there is an urgent need for strategic alignment of concrete activities in order to safeguard a close and beneficial working relationship between CopCap and CLEAN that will create value for both in future – a call of action for management to follow up on their strategic autonomy.

5.3.1 Strategic Alignment for Future Collaboration

The focus areas of both organizations might not seem to fit well together in the short term, which could be an obstacle to finding a new direction of how to work together from now on. But it also means that CopCap as a founding member of the cluster and member of the Board should use its

influence to push for more international activities as an integral part of the strategy of the organization. For CopCap this would mean to be an active member of the cluster organization and get involved in projects.

However, as the Head of Analysis has pointed out, it did not take long for IP to evaporate from the list of activities the new cluster CLEAN would be focussing on in future. Consequently he underlines that CopCap should act rapidly, lobby for its interest and remind them to pass on relevant contacts of companies that might be interested in setting up in the region. Otherwise, he fears it will just drown in their other daily activities. The Head of Business Development from CLEAN echoes this opinion in the following quote: “This would once again require that CopCap is very active, pushing for us to think about this in our daily work because otherwise we will just do what our national members tell us right. We are member driven. So we need someone to push this agenda internally also for us to focus on this.” (Michael).

At the same time it should not be underestimated how much influence CopCap potentially still has on the cluster activities. After all CopCap CEO Claus Lønborg is Vice Chair on the Board and is part of the so called “*forretnings udvalg*”, which consists of a group of people that can take decisions between the scheduled Board Meetings. In addition to that CopCap has been part of a working group on international strategy of CLEAN, thus setting out to voice their interest in this particular area.

Whichever way you look at it, the situation is that CLEAN or the CCC used to be an integrated part of the IP department at CopCap. For the relationship with CopCap it also means that new channels of communication and ways of interacting need to be developed. This is especially the case since both will be dependent on drawing on each other’s competences and knowledge. Viewing knowledge as a stock of expertise that is critical for the success of the two organizations under scrutiny here, it becomes obvious what complex political process knowledge tends to become in the knowledge intensive firm. Kärreman (2010) further emphasizes that knowledge is embedded in the social context both inside and outside the boundaries of the firm, which becomes particularly visible in this case.

The strategically important connection of CopCap and CLEAN is even more relevant due to the strong position of both organizations in Copenhagen. Here, CopCap will further play an important role in advocating for the local Copenhagen agenda of CLEAN after transforming into a national cluster organization. However, the former Head of the CCC project clarifies that one must not forget that CLEAN is more than just a Secretariat. Respectively, the CEO of CopCap has

regular meetings with the cluster members that are represented on the Board resulting in a good working relationship with them independently of CLEAN. As for him he underlines that regular meetings at the project manager level, taking place every five weeks for five years, further gives a good foundation to build new projects on.

The status quo of where the employees of CopCap and CLEAN find themselves thus further highlights the importance of the organizational architecture and the ways communities are connected. In this context Brown & Duguid (1991) argue that an important point is to find the right balance between keeping the autonomy of communities, while fostering pipelines that allow for the distinct communities' experiments to be shared at the same time. After analysing the case thoroughly this is really where the organizations find themselves at this point in time.

Viewing the cluster as a facilitator of the local cleantech network, plays a central role in building value propositions that can be used for IP purposes in CopCap. In cooperation with an IP expert from Terrain consultancy, the Director of IP and Clusters has further developed a template on how to define a value proposition and what kind of information needs to be there for it to count as a value proposition. One point here is the network and expertise, meaning that an IP consultant needs to be able to identify key stakeholders and the partners and come to an agreement for them to actively support the value proposition with their services, know-how or expertise and be open to meet with foreign investors. If the network is not in place, it does not count as a value proposition, thus underlining the role of networks in translating and transferring knowledge between groups and across contexts (Swan et al. 2009).

For the Head of Business Development at CLEAN, there are two important aspects, being the strategic alignment and looking for a strategic fit on the one hand and interacting on a daily basis on the other such as joining forces on the smart city expo in Barcelona. Here the employees do something together actively, spend time together and have opportunities to talk to each other, thus deliberately creating opportunities for "touch points" as he calls it, as an important aspect of their daily work. This ambidextrous approach is likely to be of great importance acknowledging that new knowledge and knowing is obtained by using knowledge as an instrument for knowing in a dynamic dialogue with both the social and physical context (Cook & Brown, 1999).

Speaking of practice, the Head of IP and Clusters mentions her responsibility in having a joint meeting with the IP consultant for cleantech and CLEAN, where both organizations can present their activity plans for 2015 and identify two or three opportunities for collaboration. She further emphasizes the importance of this dialogue as a way to keep up the way of thinking that has

characterized the relationship between the cleantech cluster and CopCap from the outset.

Conserving this mindset is thus an essential element of how she makes use of her strategic autonomy and becomes even more important as both organizations are moving on to new things on their daily jobs and employees are shifting positions. This accents the aspect that knowledge is equivocal, dynamic and context-dependent. As the context and relationships shift it becomes obvious that the relationship between increased knowledge, knowledge transfer and organizational performance is perpetually negotiated that is socially and politically (Cook & Brown, 1999).

On the whole more active collaboration will be required in future, where before working together was more natural and eventually happened by itself when the CCC was an integrated part of IP at CopCap. For the strategic alignment to be substantial it would require for both organizations to agree on a strategic focus and concrete activities that are to be executed jointly in the course of a set time frame. This would be relevant to make the collaboration more concrete and also to have concrete subjects to talk about when meeting, that can further be measured and evaluated. Keeping in mind that CLEAN is now a national cluster organization, the collaboration would be limited to areas where Copenhagen as an economic area has something to offer to a foreign investor in terms of a clear value proposition. In general this is also flagged by CLEAN, as the Head of Development argues that it would be good to have more strategic alignment on what the two organizations want to achieve together in a more long-term perspective where it makes sense.

The complex and dynamic relationship between CopCap and CLEAN, also in regard to the wider ecosystem in Copenhagen they are embedded in, certainly has implications for how they will exchange knowledge and foster knowledge sharing in future. This certainly exemplifies the tension between management and management as put forward by Alvesson and Kärreman (2001). From the management and strategy perspective, it is definitely a challenge to find novel practices of how to actually do that in a conscious and channelled effort.

5.4 Implications

As mentioned earlier the transition from being one organization to being two organizations is a process of finding new ways of communicating with each other and finding a common ground to work from. The weakened institutional framework the employees of CopCap and CLEAN to meet and work together, has led to a loss of interaction and thus also loss of knowledge:

„Yeah, of course the transition period is always hard in a way. We have daily contact, we are very close and also we are more in control in a way. And now of course they are far away. What I would worry about is the day where we don't have any personal ties with them anymore. So we need to keep having good personal relations with the people over there.“ (Marianna, Director – IP and Clusters)

As cluster expert and founder of the CCC project Nikolai highlights, CopCap and CLEAN have the best possible starting point to build fruitful relations between the two organizations. Keeping up the network mindset that has laid the foundation for the cluster initiative in order to position CopCap at the middle of all the partners involved, is important here. However, no one really doubts that knowledge work is difficult to manage or steer in a deliberate way. As Kärreman & Alvesson (2009) point out knowledge-intensive firms make use of knowledge disclosed in qualified individuals. Respectively this is really what the emphasis should be on in terms of knowledge management, thus arguing for human centric practices.

At the same time it makes sense to have a sense of direction of what exactly it is the two organizations should engage in jointly, thus arguing for an ambidextrous approach that combines strategic alignment and collaboration through interaction on a daily basis. In that regard one solution could be strategic knowledge sharing, where knowing has a specific purpose targeted at achieving particular results. This view goes hand in hand with seeing knowledge not as a thing but as an activity instead. Simultaneously this calls for a socio-ideological management type that seeks to build identities and where social relations and ideology play a more important role (Alvesson & Kärreman, 2001). Successfully striking this balance could be a constructive way of bridging the recent divide between CopCap and CLEAN that used to be very close in terms of their strategy, but also in terms of the geographical office location and most importantly also the employees that were colleagues before, sharing a common cleantech identity.

The Head of the ICN Secretariat, who has been part of building up the cleantech department at CopCap, states with concern that CopCap has become more and more formal in their interaction with external partners, thus being very square in terms of what IP activities they pursue. For him this jeopardizes the close personal relations between CopCap and the key partners as well as the potential for knowledge sharing, if the organizations grow further apart. It is important that the consultants in IP see the employees of CLEAN as colleagues, which includes making a conscious effort to actively foster good relations and pipelines for networking.

Focusing too much on the strategic and management side of the issues at hand, may thus have adversary effects and is surely going to undermine the great potential to develop new common

practices of knowledge sharing and knowledge exchange that can be built on the still existing good relations between the employees at both ends. The danger here being that social relations are reduced to enabling knowledge creation instead of viewing them as a penetrating aspect on the action itself as Robertson et al. (2003) have indicated.

No matter from which side you look at knowledge management, in practice it seems to be much more about people and the practices they engage in than it is about organizations. Taking a perspective of networks as channels for the flow of knowledge (Swan et al. 2009) means engaging in common activities and foster those knowledge pipelines in an on going dialogue. Nobody really doubts that this takes time and will always be an effort. But it is exactly this enabling context or framework that has an impact on processes of how knowledge is used for specific purposes in the knowledge intensive firm: „It just, it takes time. You need to have the network in place and then you need to start develop these value propositions or whatever you call it, these specific packages for the companies. Otherwise they are not going to come.“ (Anne-Katrine, Project Manager - CHC).

Concluding the discussion part, the main aspect in view of the research question seems to be the lack of an institutional frame that allows for the employees of CopCap and CLEAN to work together from now on. At least, the institutional frame was much stronger when the employees have been part of the same department and there was a natural overlap of the work that went hand in hand really. It is thus important to find ways and identify fora for the previous colleagues to meet, interact and share knowledge. In order to keep having this strong exchange, management needs to agree on a strategy and support concrete activities with the necessary resources. Shifting the focus more towards social interaction, the main question for management then becomes how to connect various social groups and perspectives, identities and interests by an enabling framework to achieve certain tasks or purposes as proposed by Swan et al. (2009).

6. Conclusion

The first part of the analysis has established the importance of knowledge for CopCap as the regional IP agency in Greater Copenhagen. Part of the difficult task of attracting and retaining companies, talent and capital is to have knowledge on specific sectors and being able to connect the right people in order to build a compelling business case for a potential foreign investor.

Knowledge is thus the main resource and also output of CopCap, putting the knowledge worker or the IP consultants as the main means of production at the centre of the organization. The capacity, motivation and performance of the consultants become a main interest of CopCap, as they are vital for the organization to reach its goals and meet the job targets.

In that context the CCC project has been established for very selfish reasons in order to get an overview of the product and the local strongholds in the cleantech sector by gathering the relevant actors under the roof of a cluster initiative with CopCap at the centre. The rationale behind this is at least twofold and reaches from branding and boosting the local cleantech ecosystem in Copenhagen, to creating a one-point entry for foreign companies, investors and talent to relevant partners in the geographic cluster facilitated by the cluster organization. Viewing IP as selling business attractiveness, the aim here has been to portray Copenhagen as an innovative hub and the “place to be” for cleantech. Further on access to political decision-makers also plays an important role in the highly regulated sector, where public procurement further represents a high share of the demand for cleantech products at the same time.

The establishment of clusters is thus beneficial in terms of directly working together with the cluster organization but also in terms of fostering good network relations with the various project partners that were part of initiating the CCC project as an example. Among those are Ministries and local authorities, Universities and research institutions as well as local cleantech companies.

With the end of the CCC project, the cluster organization has gone through an intense process of transformation that has without a doubt also influenced the relation to its mother company CopCap. After becoming a self-sustainable organization and merging with the national LEAN energy cluster into CLEAN this journey of change finally culminated with the cluster organization moving out of the CopCap office spaces.

In the short term this has meant that CopCap let go almost of its entire cleantech department, which has now shrunk to one cleantech consultant in IP. The cleantech experts that have been CopCap employees and part of the internal knowledge base of the organization have now been

externalized or outsourced in a way, thus leading to knowledge drain regarding cleantech. In terms of IP the question thus becomes how can CopCap access the knowledge that has previously fallen within the boundaries of the firm and has been naturally available for IP purposes. As a matter of fact there has been a gradual loss of institutional framework of how the employees of CopCap and CLEAN should meet and engage in practices of knowledge sharing and exchange from now on. Hand in hand with this loss of interaction, goes a significant loss of knowledge so to say.

To attract cleantech companies to Copenhagen CLEAN plays an important role in building compelling and very concrete value propositions. One example here are public tenders that are further to be seen in the wider strategy of Copenhagen becoming the first CO₂ neutral capital in the world. It becomes obvious that there is also a very strong political element here.

First of all CopCap serves as an instrument to implement the political agenda, not only on a local, but also on a regional and national level as we have seen with the recent cluster initiative the Copenhagen Healthtech Cluster. Second, having a well-functioning cluster organization is helpful to stay close to political decision-makers, who ultimately finance CopCap and set the frame conditions under which the organization has to operate. The facilitation of tenders by CLEAN is one of the most recent examples where this mutual dependency of CopCap and CLEAN becomes very obvious, thus underlining the political nature of knowledge.

There is no doubt that the transformation process the cluster has been through in the past two years has been a game changer for how the employees of both CopCap and CLEAN are working together. Formerly being colleagues in the same IP department, sharing the same office space the cluster organization has a life of its own to date. Now it's 'two brains' that are not automatically synchronized, which was a given in the previous institutional set-up. In consequence this also impacts how knowledge is shared and transferred for the purpose of IP. New ways of communication and practices of exchanging knowledge need to be developed.

Ironically this coincides with the cluster initiative being more powerful than ever. Deciding to make the CCC a self-sustainable member based organization has thus proven to be the right decision in terms of strengthening the cluster initiative and consolidating what has started out as a timely limited endeavour - a project. After the merger, CLEAN has finally outgrown the mother company, having about as many employees as CopCap. This has further been underlined by the offspring moving out of the common office spaces. Further potential for a conflict of interests stems from the fact that CLEAN serves national members, whereas CopCap tries to attract companies that are not located in Copenhagen yet.

But CopCap also needs to make sure that the future strategy of CLEAN will maintain this magnetic effect on international companies and engages in cutting-edge innovative projects. This will be among the main tasks of CopCap and the CEO who still enjoys considerable power on the cluster initiative as a member of the Board. Having IP relevant activities as part of the portfolio of the cluster initiative has been a problematic issue from day one of the CCC project and there is no doubt that it will require a very conscious effort from CopCap's side to push for in future, even more so after the merger.

In concrete terms that would require CLEAN to be at the front of certain cleantech activities on a global level in terms of innovative solutions as the CEO of CopCap underlines: „If we want to win a foreign company to get established here in Copenhagen, it is the combined knowledge and service that we and our partners can provide and offer to them. So it is very very important.“ (Claus). Knowledge and the value it can create it seems is context specific and reveals itself when applied to a specific investment case. It further endorses the dynamic view on knowledge as advocated by Swan et al. (2009), claiming it to be in the making and continuously reconstructed as individuals act and interact in a process.

In the immediate this change process has made the relation between the two organizations more formal. CopCap has to accept that they are no longer the *primus inter pares*. However, hopes are that the relations will at the same time also become more specific, targeted and for that matter also grounded on clear strategic considerations. This will ultimately also depend on how well CopCap lobbies its own interests being one member among many members of the cluster organization.

In conclusion the organizational transformation of the cluster initiative has shaken up the institutional set-up and as a matter of fact also the way CopCap and CLEAN are connected. The importance of organizational architecture and how communities are linked is emphasized in relation to knowledge sharing as a social practice (Brown & Duguid 1991). This in turn has deeply impacted the framework, the basis on which practices of knowledge sharing had previously been developed and executed.

Speaking of the institutional context that stimulates and shapes the process of knowledge creation Robertson et al. (2003) underline the role of social identity. This institutional context it seems needs to be re-negotiated between CopCap and CLEAN. At the same time there is no doubt that there is still a strong social identity with the CCC project of employees both in CopCap and

CLEAN but also with other project partners that have been part of the steering group, which serves as a good basis to build new relations and practices on.

The case of the CCC as a framework for knowledge management nicely illustrates the main flaws with the term 'knowledge management'. Looking at this phenomenon through process and practice perspectives of 'knowledge' or 'knowing' exemplifies why it is a more complicated and complex concept than one might think at the face of it. Avoiding the seductive appeal of 'knowledge management' and engaging with the case specifics as disclosed in the work at hand enables to get closer to what is actually happening in a knowledge intensive firm - CopCap in that case - and how the respective fosters the creation of sector specific knowledge pipelines. As the framework conditions shift more attention needs to be paid to how those carefully crafted pipelines can be maintained or re-organized in a way of creating value for IP in future.

The discussion has shown that this will require a conscious effort of the respective IP consultants whose performance will ultimately also depend on how good they are on tapping the knowledge network and actively using CLEAN on a daily basis. It is also true that management plays an important part in this as well. This is especially the case because both companies are strong actors in Copenhagen and both have an interest in working together and having a good working relation.

First, the influence on the Board should be used to make sure CLEAN engages in activities that generate value for CopCap and have the strength of attracting foreign companies. Second, a clear strategy should be formulated on how both organizations want to work together, both on a more long-term scheme but also in terms of concrete activities on a more ad-hoc basis. Those strategic considerations will then give the employees at both ends a clear sense of direction and a frame under which to nurture pipelines for the exchange of knowledge and thus develop novel practices of knowledge sharing upon.

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