Master's Thesis in Informatics

West Swedish Competence Intermediary
Strategic recommendations

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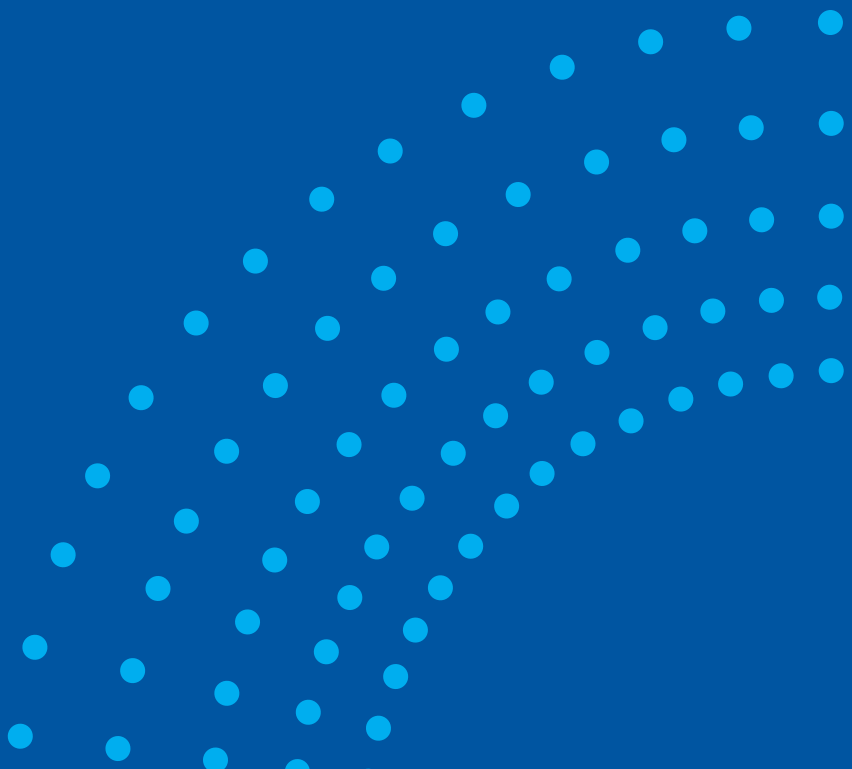
Göteborg, Sweden 2004

Business Technology



REPORT NO. 2004:5

West Swedish Competence Intermediary

Strategic recommendations for creation
of a regional competence intermediary

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West Swedish Competence Intermediary

- Strategic recommendations for creation of a regional competence intermediary

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SUMMARY

The region of Västra Götaland has developed a plan for a regional development strategy, in order to strengthen growth in the western part of Sweden. One of the projects forms part of this regional development strategy is "Ökad Offertkraft". It was initiated by the region of Västra Götaland and the Chamber of Commerce and Industry, with the purpose of mapping selected competences within the western part of Sweden. This competence is to be stored in a competence system and used to improve the competence that is present within created business offers from companies. The process of mapping and managing the competence system needs to be managed by an organisation, here named the Competence Intermediary (CI). The main purpose of the thesis is to formulate a strategy for the CI's business idea based on the identified problems. In order to clarify the main purpose we have chosen to divide it into two parts; 1. To identify and describe areas of problem within the external relations 2. To identify and describe areas of problem when identifying competence. The theoretical framework of the thesis is based on theories, which are drawn from the theoretical areas of stakeholder, network and competence theory. Ten depth interviews and four workshops have been conducted in order to collect the primary data. The following problems and recommendations were identified as being the most important; 1.) The most central parts of the competence system, as for example the competence profiles and detailed search functions, should be closed. This is necessary as competence from an organisation often contains sensitive information in relation to competitors. 2.) The business process of the Competence Intermediary needs to be clear and formulated.

When formulating this process there are a few areas that are central. The *incentives* for organisations to use the services of the Competence Intermediary and their contribution to the mapping process needs to be communicated. The Competence Intermediary also needs to create *trust* for its business idea so that organisations will perceive its business as serious, accept the mapping and employ its services. Related to this is the need for *objective owners and managers* that are represented on a regional level together with a non-profit focus. Further to this, the Competence Intermediary needs its *own network* for creating an awareness of its existence, gain acceptance among actors and in order to receive information of business opportunities. 3.) In the collaborations which are created a number of difficulties could arise that might lead to a failure of the collaborations purpose. Successful collaborations will result in good references and marketing of the Competence Intermediary. Therefore it has an interest in how the collaborations evolve. 4.) Competence is a complex and dynamic concept that makes it difficult to identify and map. In order to achieve success in the mapping of competence we recommend that this process should be conducted in five stages: selection of branches in the region; selection of competitive competence areas within these branches; selection of relevant organisations and competences within these competence areas; analyse in which *other* branches and following organisation that these competence areas could exist. On an organisational level the mapping could be done by identifying competence that is: connected with a unique business area, a unique application and related competence.

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The report is written in English.

Keywords: stakeholder theory, regional development, regional competence, core competence, cluster.

Västsvensk kompetensförmedling

- Strategiska rekommendationer för skapandet av en regional kompetensförmedlare

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SUMMERING

Västra Götalandsregionen har utvecklat en plan för en regional utvecklingsstrategi med syftet att stärka tillväxten in västra Sverige. Ett av projekten som är en del av denna regionala utvecklingsstrategi är ”Ökad Offertkraft”. Den var initierad av Västra Götalandsregionen och Västsvenska Industri och Handelskammaren med syftet att kartlägga utvalda kompetenser inom västra Sverige. Den här kompetensen ska förvaras i ett kompetenssystem och användas för att förbättra existerande kompetens i affärserbjudanden från företag.

Processen för att kartlägga och driva kompetenssystemet behöver skötas av en organisation, här benämnd som en Kompetensförmedlare. Huvudsyftet med uppsatsen är att formulera en strategi för denna organisations verksamhet, baserat på svårigheter med att skapa Kompetensförmedlaren. Syftet har resulterat i ytterligare två delsyften. 1.) Att identifiera och beskriva problemområden inom Kompetensförmedlarens externa relationer. 2.) Att identifiera och beskriva problemområden när kompetens ska identifieras. Uppsatsens teoretiska ramverk är baserat på teorier från de teoretiska områdena av stakeholder-, nätverks-, och kompetensteori. Tio djupintervjuer och fyra workshops har genomförts för att samla in den primära informationen.

Följande problem och rekommendationer identifierades som de mest centrala; 1.) De mest centrala delarna av kompetenssystemet, till exempel kompetensprofiler and specifika sökfunktioner, bör vara slutna. Det är nödvändigt eftersom kompetens från en organisation ofta innehåller känslig information i relation till konkurrenter. 2.) Affärsprocessen för Kompetensförmedlaren bör vara klar och formulerad. När denna process formuleras är det några områden som är centrala. *Incitamenten* för organisationer att använda Kompetensförmedlarens tjänster och delta i kartläggningsprocessen behöver kommuniceras. Kompetensförmedlaren behöver även skapa *tillit* för sin affärsidé för att organisationer ska uppfatta dess verksamhet som seriös, acceptera kartläggningen och använda dess tjänster. Relaterat till detta är behovet av objektiva ägare och driftsansvariga som är representerade på en regional nivå samtidigt som ett icke-vinstdrivande fokus bibehålls. Utöver detta behöver Kompetensförmedlaren även sitt eget nätverk för att skapa en medvetenhet om dess existens, skapa acceptans bland aktörer och för att skaffa information om affärsmöjligheter. 3.) I de samarbeten som skapas kan en rad svårigheter uppstå som kan leda till ett misslyckande av samarbetena. Framgångsrika samarbeten kommer att leda till bra referenser och marknadsföring av Kompetensförmedlaren. Därför har den ett intresse i hur samarbetena utvecklas. 4.) Kompetens är ett komplext och dynamiskt koncept vilket gör det svårt att identifiera och kartlägga. För att leda till framgång i kartläggningen rekommenderar vi att denna process genomförs i fem steg: urval av relevanta branscher inom regionen; urval av konkurrenskraftiga kompetensområden inom dessa branscher; urval av relevanta organisationer och kompetenser inom dessa kompetensområden; analys av vilka andra branscher och följande organisationer där dess kompetensområden kan existera. På en organisatorisk nivå kan kartläggningen genomföras genom att identifiera kompetens som är: kopplad till ett unikt affärsområde, en unik applikation och relaterad kompetens.

Rapporten är skriven på engelska.

Nyckelord: Stakeholder teori, regional utveckling, regional kompetens, kärnkompetenser, kluster.

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Acronyms

CCI: West Sweden Chamber of Commerce and Industry

CI: Competence Intermediary

CS: Competence System

MNC: Multi National Company

SCA: Sustainable Competitive Advantage

VGR: Västra Götalandsregionen

1. Background and business idea

Outlined in chapter one is the background of the project that the thesis is a part of. The connection of the thesis to the West Swedish Chamber of Commerce and Industry and to the region of Västra Götaland is explained. The second part is an explanation of the general idea with a regional competence intermediary that the thesis is focused on. Outlined is a general description of the idea and how it can be supported by a competence system.

1.1 Background

The region of Västra Götaland (VGR) has together with government actors in the region, communities, industry and trade unions developed a plan for a regional development strategy (RUS)[1]. Regional development through economical innovation is the key to a stronger society in the future. In order to make the region more independent from decisions made outside the region it has to develop its industry and avoid loosing competitiveness. The region needs the ability to continuously develop new products, processes and concepts that are able to compete on the world market. One possible way to facilitate the use and development of competence within organisations is through created collaboration between companies and systemise information of competence. This could be complemented with resources from the educational and research sectors. In this process the political system in a region can also play an important role. As Castells (2000) claims these types of networks in today's societies are fulfilling an important function. These networks and the organisations within them are today to a large extent using modern IT-technology to support their businesses'.

As a part of RUS, VGR and West Swedish Chamber of Commerce and Industry (CCI) initiated the project "Ökad Offertkraft" (ÖO). Its purpose is to increase the possibility for companies to win business opportunities by facilitating a better use of specific competences within the region. This could be done by creating a competence system (CS) that contains information on selected competence areas from the western part of Sweden. These competences should be perceived as competitive from an industrial perspective. This process and the CS should be supported by a managing organisation.

This thesis is a part of a pre-study for the project which purpose is to develop the conditions for the business of Ökad Offertkraft. As a part of the pre-study three theses has been done. This thesis is focused on identification of difficulties within relations between the managing organisation and the actors relevant for the business. Also, the concept of competence have been analysed in relation to the need of the business. The other two theses analyses: 1. Which structure the CS should have in order to fulfil its purpose in best possible way. 2. Which condition the created collaborations need to have in order to be successful.

This thesis is written from the perspective of the managing organisation and its business within the Western part of Sweden. This managing organisation will in the thesis be referred to as the *Competence Intermediary (CI) or the managing organisation*. The results can be used by CCI or/and by VGR when deciding on the project's future. Some of the results might also be of interest for other organisations working within regional development in Sweden or abroad.

[1] The purpose of RUS is to function as a base for further efforts to strengthen the region as an attractive region in which to live and work.

CCI is owned by 2400 companies in the western part of Sweden and is an important actor for the region. Its purpose is to support the industry by providing services and focusing on regional development, in relation to the business sector's needs. The purpose is to strengthen the position of the western part of Sweden on the world market.[2] VGR is responsible for managing the healthcare in the western part of Sweden, cultural support and regional development (that RUS is a part of)[3].

1.2. The competence intermediary

This part of the chapter is a basic description of the business idea that the CI plans to develop. As mentioned previous the purpose of the organisation is to improve and stimulate the growth of the economy in the western part of Sweden. This should be accomplished by creating an organisation, a Competence Intermediary (CI), which can facilitate the transfer of competence between different regional stakeholders with the purpose to create better business opportunities. Companies within the region are to be provided with the right competence by the CI, in order to create business solutions with a high commercial value. The following description of the CI should be regarded as a rough description of its main principles.

The perspective in this thesis has been that the CI will be an independent unit/organisation. If this should not be the case the result should still be applicable. This is possible since the focus has been on developing the different organisational functions that can exist in order to accomplish the purpose of the business idea.

1.2.1. Competence system

As mentioned above the tool used for conducting the business will be an internal competence system (CS). This system will contain mapped competences within a chosen number of organisations based in the region. The structure of the CS will start on an overall competence level and then become more and more detailed down to a specific organisational level, departmental, and in some cases to an individual level.[4]

1.2.2. General business process

How will the organisation work in general? The CI plans to map selected competences from primarily selected companies, institutes and institutions that are situated in the Western part of Sweden. This competence is then stored in a CS that the CI will manage. The competence that is relevant ought to have a high business potential and at the same time have a demand on the international market by Multi-National Companies (MNC). This system can be used when locating companies and institutions with complementary competence. The competence base can be used for improving the possibility of winning a business deal by adding for example competences necessary for constructing a bid. This new CI will facilitate the creation

[2] For more information on CCI: www.handelskammaren.net
[3] For more information on VGR: www.vgregion.se
[4] For an example of a case with regional/bransch specific competence mapped in a C.S., see www.innoveas.com

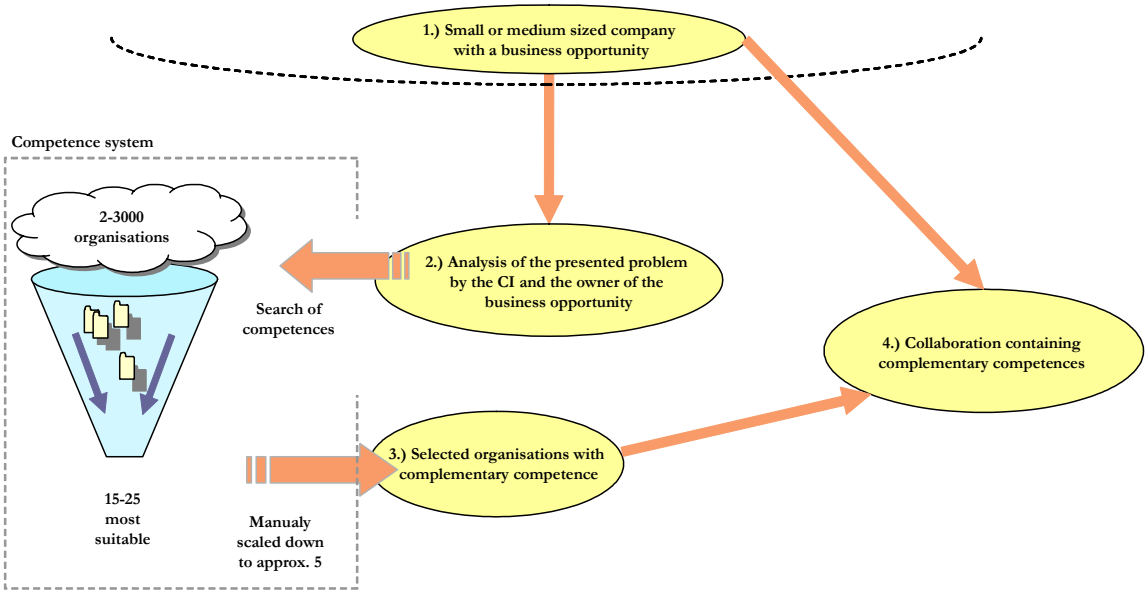
of powerful business deals from companies within the region and improve the business process towards, for example a MNC. (See figure 1)

The collaborations in the final stage in figure 1 can be created in principally two ways. First, the CI can itself conduct searches in this competence system. Representatives, with the right competence, from the selected organisations will then be invited to form a collaboration that can bid on the development of the product that for example a MNC requests. Hence a commercial network is created with competence from different companies and institutions in the western part of Sweden. Secondly, if the CI is only responsible for managing the CS and lets the actors in the region use the system for free. Companies could then themselves conduct searches in the CS and find competence that they are interested in.

Information about a business opportunity can reach the CI in principally two ways. First, is through companies contacting the CI directly with the intention of finding partners with a complementary competence. Secondly, the CI can itself localize information on business opportunities through its own network and itself initiate collaborations with selected organisations.

Example**:** A MNC that needs to develop a new computer processor sends out a bid request on the development of a new computer processor within its network. The CI receives information about this deal through a company that is a supplier to the MNC. The supplier is interested in formulating a bid on the construction of the new processor, but does not have the capacity to do that by themselves. In order to improve the possibility to win this bid the CI provides a set of organisations that has the right competence. These organisations are scanned and a small number of them are invited together with the initial company to formulate a bid on this new processor. Collaboration between the involved companies is created.

Figure 1: Organisational chart of the idea.



1.3. Definitions

The following terms will be used frequently through the thesis and are defined below. The most central ones will in the thesis be explained and discussed more thoroughly as they become relevant:

Strategy: *"…the pattern or plan that integrates an organisation's major goals, policies and action sequences into a cohesive whole. A well-formulated strategy helps to marshal and allocate an organisation's resources into a unique and viable posture based on its relative internal competences and shortcomings, anticipated changes in the environment and contingent moves by intelligent opponents.*"(Quinn, 1980a:7).

Western part of Sweden: The areas defined as western part of Sweden is depicted in the map that is presented below. Parallel to his definition the term region will be used throughout the thesis.

Figure 2: Map over the western part of Sweden

Source: The West Swedish Chamber of Commerce and Industry, 2003.

Collaboration: *"collaboration is a voluntary long-term agreement where two or more independent companies coordinate some of their resources. Collaboration is performed by mutual commitment for a common objective and this result in an increase in an individual partner goal fulfilment. This can be achieved by integrating certain corporate function while other functions are kept separated from the partnership."* (Andersson, 1979: 88, own translation)

Small companies: companies with 10-99 employees. (Skaug, 2000)

Medium sized companies: companies with 100-499 employees. (Skaug, 2000)

Competence: One definition of competence put up by Sanchez (2002) is that "*Competence is the ability to sustain the coordinated deployment of assets in ways that help a firm achieves its goals*." It is identified as a hierarchy of activities based on three levels from the three concepts – *assets*, *capabilities* and *skills*.

Competence System: Competence system is according to Hahn and Subrimani (2000) a subgroup within Knowledge Management System and can be described as knowledge databases or profiles of expert. These applications are used in order to identify and coordinate experts with the purpose to create project groups within an organisations operative work. This definition is focused on intra-organisational competence. In this thesis the CS will be considered as a system that contains inter-organisational competence. Still the basic definition of a CS is applicable since it regards a knowledge database containing profiles.

Network: One general definition of network is that a network consists of a number of independent organisations that together can reach a goal that they cannot reach by themselves. (Svensson, Jakobsson & Åberg, 2001)

Stakeholder: "*The stakeholders in a firm are individuals and constituencies that contribute, either voluntarily or involuntarily, to its wealth-creating capacity and activities, and who are therefore its potential beneficiaries and/or risk bearers*." (Post, Preston and Sachs, 2002:8) in this thesis we have chosen to focus on the CI's external stakeholders. This is since the definition includes both internal and external organisations/individuals that contribute to the business.

2. Research problem

In this chapter the onset of the thesis will be discussed. Different aspects of the topic for this thesis are discussed and the relevant problems for the thesis identified. The main themes are strategy, network, relationships, and aspects of competence. After a discussion on the research problem the purpose of the thesis is presented followed by the main research questions.

2.1.1. Strategic perspective

Based on the organisational description made in part 1.2 different problems become relevant to discuss. Certain central functions of the CI, according to our opinion, will be discussed. According to Mintzberg, Ahlstrand and Lampel (1998) strategy is a way for an organisation to direct and focus its activities towards a certain goal. In a newly created organisation the development of a strategy becomes an essential task. In this report strategy will be used as a perspective and method for finding and analysing which factors that could be relevant for the CI. *With this in consideration it is important to identify and describe areas of problems and identify a strategy for solving these problems.*

2.1.2. Relationships and critical areas

As a part of our strategy process we argue that it is central to identify the factors, which are important to start with. When formulating strategy for an organisation it is possible to start from a number of internal and external factors and angles. Since the CI is in an initial stage of its business it is interesting to examine which *relations* the organisations should have towards its external actors and critical areas within these relations (Polonsky, 1995).

This business process is depending on two major areas of information according to our opinion. Those are information about competence, and information about business opportunities. To get this information the CI needs relations to external actors. Those relations need to be designed so that they can fulfil the purpose of the business as good as possible. In order to do that there need to be a basic strategy which points to difficulties within these relations and how they can be approached. Since it is the external stakeholders, organisations within the region, which will use and profit from the CI, we find it natural to start with the external perspective. By knowing which difficulties these organisations identify with the business of the CI it is possible to form/construct the organisational structure of the CI and business process according to its stakeholder's best interest.

Relationships

The CI is highly dependent on the relations to the organisations that provide information on competence and information on business opportunities. In order to control that the created collaborations becomes successful the CI need to have some kind of relation towards the collaborating organisations. When creating successful collaborations it is important to understand the different problems that might occur within these relations and find solutions to those problems. In order to do this, we believe that the CI needs to be aware of which fundamental parts of the network that has to function, for it to fulfil its purpose. Examples of parts that could be important, which is supported by Svensson et al. (2001), are for example trust, equal relations, time and resources and external support. Sharma (1998) has a slightly different approach and starts from the concepts of relations, institutions and ethical factors.

Incentives
Organisations that are participating in the collaborations must feel that the collaboration contributes something to their own business (Sharma, 1998). With this in mind the CI ought to know if and how the incentives for using its services differ among the organisations within the region. A company that needs complementary competence to close a business deal might have a different perspective on the CI and its contribution, compared to for example with an institution searching for commercialisation of a new research result.

Stakeholders
An organisation has both internal and external stakeholders. Our focus will be on the external part of the stakeholder of the CI. It has to a large extent the character of a network organisation and the external stakeholders then become important. When selecting stakeholders our assumption is based on the statement of Post et al. (2002), which is that all stakeholders of an organisation are important. However, depending on the context of the research it is possible to focus on certain stakeholders in order to achieve a specific purpose (Polonsky, 1995). Based on this it is possible to choose stakeholders that are to be investigated. The selection of the organisations is based on which relationships the CI has to have in order to fulfil its organisational purpose. As external actors in similar business or competence areas, those organisations contribute with functions that the CI is depended on. The most important stakeholders at the present moment, according to our opinion, are listed below and presented in figure 2:

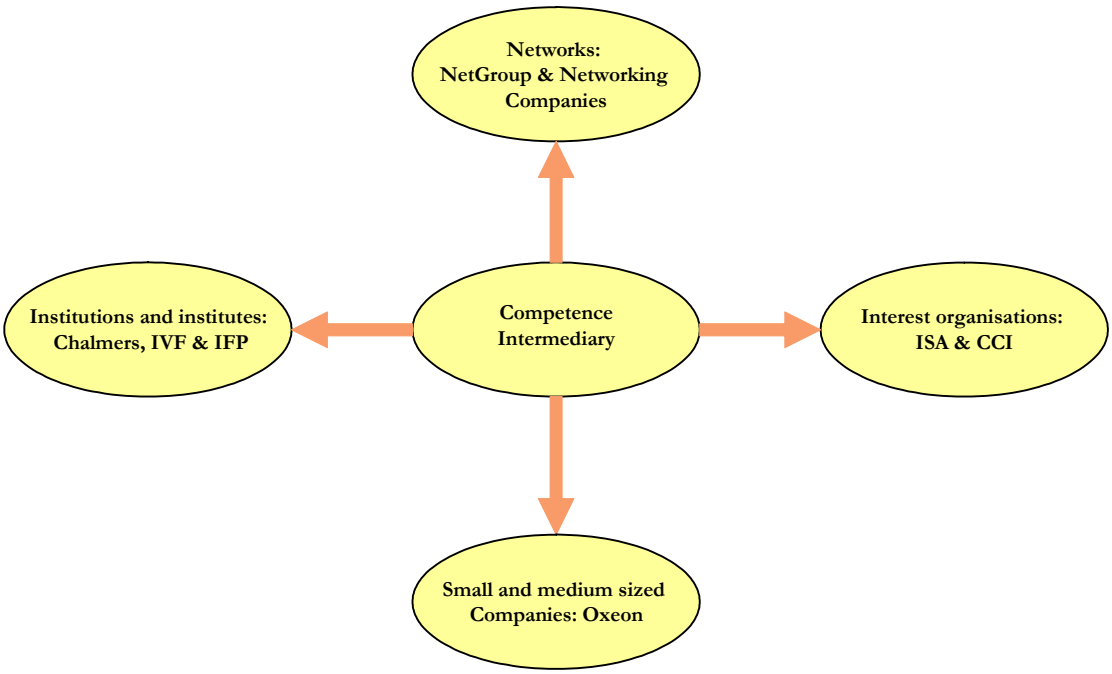
- Selected organisations with specific competence in the Western part of Sweden:
    1. Small and medium sized companies for example OXEON and Frontside.
    2. Institutions for example Chalmers.
    3. Institutes for example IVF and IFP-SICOMP.

  These organisations have competences that can be mapped and information of it can stored in the competence system. The same organisations are thought to turn to the CI in order to find a complementary competence. Important to stress in this last case is that the organisations do not need to be mapped in the competence system for using the CI's services.

- Interest organisations for example Invest in Sweden Agency (ISA) and West Sweden Chamber of Commerce and Industry (CCI): They have knowledge of similar organisations to CI and have a wide experience from regional economical development and collaboration. These organisations are potentially contributors with resources to the CI's business.

- Existing networks for example NetGroup: Have knowledge of the competence within the network's members and can therefore contribute to the mapping of competences. Their experience on managing networks can give valuable information to the CI on how to manage its own business. They can also contribute with information on how the network's members might perceive the CI. The existing networks can also be potential competitors to the CI. These networks are often partly managed by a central organisation with knowledge of the competence within the network's member organisation and can then be a substitute to the CI's service.

Figure 3: The stakeholder of the Competence Intermediary



Determinants of successful relations

In a potential collaboration between the CI and other organisations it is important to know the factors that determine the success of the collaboration. At first the actual information on a potential business can be sensitive and a company with a business opportunity must feel confident enough to approach the CI. The managing organisation could identify factors, which are important when creating an atmosphere of *trust* for its business. Trust is an important factor in its relations and the CI might want to be perceived as a *neutral* organisation. Objectivity could here be the way that it selects the organisations for the collaboration and also that the CI itself is perceived as independent from other influential organisations. Additional important factors for approaching the CI could be that the potential partners have been screened and thus have a documented competence of being able to collaborate. Central in this could also be clear and public *guidelines* for how the selection of the actual organisations should be done and the creation of a policy of secrecy in order to increase confidence in the managing organisation.

An important issue to discuss is whether the CI should have some kind of influence on the created collaborations. Referring to Sharma (1998) collaborations often end in failure and the intended goal is not reached. With this in mind the way the collaborations functions is of great interest for the managing organisation. A failure in the collaborations could lead to a ruined reputation for the CI. If the alliance becomes successful the questions of payment or economic reimbursement for the service provided by the CI could become relevant.

A prerequisite for the CI is the distribution of information on potential business deals and how these should be attained. The core business of the managing organisation is to work as a regional business facilitator for companies in the region. Therefore it is central to have

information about distribution of business opportunities. Our opinion is that information of business opportunities is most likely distributed within networks of different characters. This is closely related with the statements of Sharma (1998) that also discusses different aspects of network theory and factors for creating a successful collaboration.

Internal competence
In order for the CI to reach its goal with the creation of collaboration, we find it necessary for the CI to have a certain competence of its own. The CI needs different areas of internal competence. This can be aggregated knowledge regarding different industries, for example biotechnology or knowledge of legal aspects, which is relevant when creating collaborations. Further, competence on how to facilitate the creation of collaboration or formulating bids might be relevant. The question then rises whether the CI has the capability of containing all the needed competences for fulfilling its organisational purpose, or does it need to supply this competence in an alternative way.

Sharing competence
The technical core of the business is the CS and the information it contains. Sharing certain knowledge between organisations might be perceived as sensitive and something that influences the success of for example a company. When the CI creates the CS it is likely that it will encounter problems with the mapping of competence, and how detailed this information should be. If competence of more sensitive character is mapped, our opinion is that there might be a risk that organisations will use the CS in a way that is negative to the company that agreed to a mapping of its competence. In addition to the transferring of competence it might be possible to detect a difference in attitude to this difficulty between institutions and companies. An institution at a university might not have the same commercial attitude towards competence and will probably be more positive to transferring knowledge to a CS. These considerations need to be discussed and recommendations provided. *With this in consideration it is important to identify and describe critical areas that could arise in these relationships and the following strategically implications.*

2.1.3. Aspects of competence

In our case the CI's business is dependent on the processing of competence. Information on competences are to be mapped and stored in the competence system and then used for enhancing the businesses for companies in the western part of Sweden. To have a clear view of the concept of competence and how to identify it is therefore central for the managing organisation's business. Competence can be analysed from multiple perspectives and angles. In this case it will be categorised in mainly three broad levels: first as a core competence within an organisation, secondly as a competence areas on a regional level, and thirdly as a dynamic/tacit concept within organisations.

Core competences and regional competence areas
According to Hamel & Prahalad (1990, 1994) an organisation, especially companies, have core competences that will contribute to the organisations success. To be able to conduct an efficient business and reach relevant goals it is important to have knowledge about the core competence of an organisation. The competence that the CI is searching for is most likely not a strict core competence in an organisation, but more something in overlapping a core competence and competence directly related to applications. When identifying information

on competence for the managing organisation's business and CS it is suitable to choose the organisations within the western part of Sweden that are regarded as having competences with high business potential. The region contains a multitude of different competences that could be categorised in different competence areas. This is supported by Porter (1998), which discusses the concept of clusters as a way to describe competences on a regional level.

Competence
If competence is perceived as something static and explicit it is fairly easy to register relevant information on competence in a system. The other aspect is to view competence as something dynamic and tacit that is difficult to monitor or register in a system. This should not imply that information on competence is impossible to map but just difficult to grasp and categorize in a constructive way.

The attitude towards competence might affect how strategy for the CI is formulated. The information on competence that is to be mapped in the CS will have certain characteristics and a level of details that might affect the way the CI works. If for example competence is perceived as something extremely dynamic and tacit this will influence how the CI finds and maps competences in organisations needed to formulate the business deals. This dimension of complexity also results in the possibility of defining specific competences differently which could affect the mapping of competence. Furthermore it should be possible to commercialise the competence that is mapped. Competence systems are a way of trying to map different types of organisationally specific information on competence on individual, departmental or organisational level (Lindgren, 2002). *With this in consideration it is important to analyse how the concept of competences is related to the CI's business in a strategic perspective.*

Summary of problematisation
The problematisation starts from a strategic perspective with the ambition to identify critical areas within the relations to the stakeholders. Within theses relations certain aspects should be relevant for the creation of stable and constructive relations as for example: incentives, sharing of competence, stakeholders. Another aspect is the concept of competence that is relevant for the managing organisation. This concept can according to our opinion in this case be viewed from three levels: 1. as competence on a regional level, 2. as core competence, 3. and as a dynamic but practical competence tied to for example specific applications.

2.1.4. Purpose

The factors identified within the research problem are linked to the CI's strategy, different relations, and view of competence. Based on the research problem the main purpose of the thesis is; *to formulate a strategy for the Competence Intermediary's business idea based on the identified problems.*

In order to clarify the main purpose we have chosen to divide it into two parts:

1. To identify and describe areas of problem within the external relations.
2. To identify and describe areas of problem when identifying competence.

2.1.5. Research questions

In order to reach this purpose the following main questions are to be answered:

1. Which areas of problem can be identified between the Competence Intermediary and the chosen stakeholders?
2. Which difficulties can arise when competence should be identified and formalised for the Competence Intermediary's competence system?

2.1.6 Delimitations

When formulating the research problem certain delimitations have been done in order to focus on the most relevant aspects of strategy for the CI. The focus is here on how the CI should operate in order to create successful collaborations. Within these collaborations several important questions will have to be solved. However, in this thesis it will not be a thorough discussion on how these collaborations should work as for example legal aspects of pooling of resources.

The different stakeholders that have been discussed in chapter two can be complemented with several others. According to our opinion some stakeholders are more relevant than others in the stage that the CI's business is at the moment. It is therefore suitable to focus on a few central stakeholders and closely examine these relations. The focus has here been to formulate a strategy that is relevant for the most central and immediate problems with stakeholders and competence. The selected types of organisation presented in the research problem in chapter 2 have been identified as the most immediate and relevant stakeholders, thus excluding for example MNCs and industry organisations. The selected stakeholders have different competence related problems that varies in complexity and the organisations themselves vary in size. However, this distinction has not been done on this stage of the analysis but is relevant for further research.

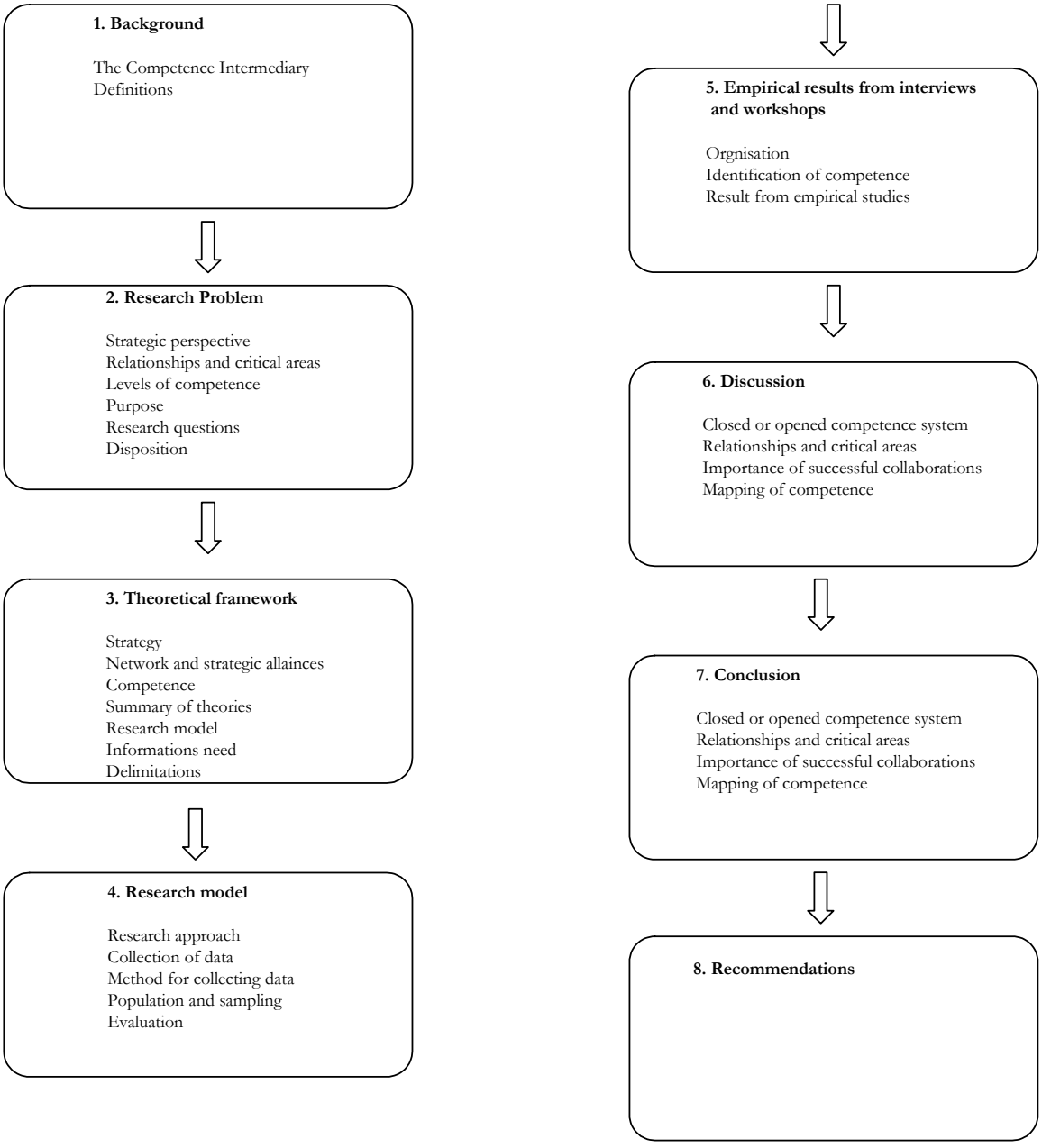
Other considerations that have been done when formulating the content are construction of the business deals, internal organisational aspects of the CI, updating of the competence system and the actual mapping of competence. These questions are of course important but will not be thoroughly discussed in this thesis. Another choice that has been made is that the mapping of competence is focused on a general suggestion for how to identify competence on a regional level for the CI's purpose. This choice is motivated by the fact that before the actual mapping is done a process for how to do it needs to be presented.

2.1.7. Disposition

The thesis is disposed in a total of 8 chapters that are depicted in figure 3. Chapter one includes the background of the thesis and an explanation of the general business idea of the Competence Intermediary. The second chapter consists of a discussion of the research problem from different angles which ends with the formulation of the thesis purpose. Chapter three contains the theoretical framework with different theories within the strategy field, theories on networks and on different aspects of competence. In the end of chapter three the research model is presented. Chapter four cover a presentation of the different parts of the research method with a criticism of the methodological aspects of the thesis. Chapter

five has a presentation of the empirical material from interviews and workshops. Chapter six include a discussion of the empirical results together with the theoretical framework. Chapter seven contains the conclusion that is based on the discussion in chapter six. Chapter eight consist of recommendations for further research.

Figure 4: Disposition of the thesis



3. Theoretical framework

The theoretical framework is a central part of the thesis. Different theories within the field of strategy development, network theory and competence, that are considered as relevant for the thesis, are discussed. These discussed theories are summarised in the end of chapter 3.

3.1. Strategy

3.1.1. What is strategy?

Strategy is a concept that is hard to define and tied to context. So far no common definition or mutual concept on how to formulate strategy seems to exist within the strategy discipline. (Mintzberg et al., 1998a) This gives the possibility of a multitude of approaches when trying to formulate a strategy for a new organisation. Quinn puts up one suitable definition for strategy, he describes strategy as:

> "…The *pattern* or *plan* that *integrates* an organisation's *major* goals, policies and action sequences into a *cohesive* whole. A well-formulated strategy helps to *marshal* and *allocate* an organisation's resources into a *unique and viable posture* based on its relative *internal competences* and *shortcomings,* anticipated *changes in the environment* and contingent moves by *intelligent opponents*."(Quinn, 1980a: 7)

This is a wide definition of strategy that does not mention anything of the actual formulation of the strategy itself i.e. the strategy process. Organisations and their surroundings vary in many different ways and hence there are often several alternatives that are suitable. Often several parallel strategies, consciously or unconsciously, are present or developed within the same organisation. (Quinn, 1980a) The CI is to a large extent a network organisation in an early stage of its development and finding a suitable strategy theory for developing its business is complicated. The field of strategy theory is to a large extent focused on developing strategy from an internal perspective in existing organisations (Mintzberg et. al., 1998). Still it is important to discuss common features, what a formulated strategy can consist of and what the starting point for strategy development can be.

3.1.2. Criteria for a clear strategy

The basic dimensions of strategy can be divided into three parts. *First* it needs to have some kind of obtainable goal, policies that guide internal and external action, and a main action sequence which purpose is to, in some way, accomplish the agenda. To accomplish this, development of organisational goals is an essential part. *Second*, it should be centred on a few main concepts, and have what Quinn calls *thrusts,* that are steps forward towards the strategy's goal. *Thirdly*, it is also important that the strategy takes into consideration not only what will happen but also the unpredictable. This gives the organisation and its members some kind of capacity to deal with unknown events, i.e. to include some alternative scenarios and how to deal with these. (Quinn, 1980)

Rumelt (referred from Mintzberg et al, 1998) puts the stress on some other related factors in his thesis on how to evaluate strategy. A strategy should fulfil four criteria. *Consistency*: When strategy is developed over time it can often be a compromise between different power groups resulting in a strategy, which consists of different diametrical viewpoint that pulls the organisation in different directions. *Consonance*: An organisation has a dual relationship between adapting to the environment and competing with other organisations. The difficulty is to find the balance in this relationship. *Advantages*: For the firm to survive it needs a competitive advantage in its field of business. This can for example be a unique skill, resource or position. *Feasibility*: In order to implement the strategy the organisation needs resources, either existing ones or acquired ones. Hence its relevant to analyse if the strategy is feasible based on the existing resources.

3.1.3. Five Ps for strategy

Mintzberg has chosen to view strategy from different perspectives - *plan, ploy, pattern, position, and perspective*. (Mintzberg, 1987a; 1998) This is a basic concept for strategy development in an organisation and contributes to a general understanding of the strategy process. The newly created CI can use the different perspectives in creating an understanding for how strategy can be used in developing its business.

The perspective of strategy as a *plan* is an intended course of action and direction. A plan in different stages with set goals and deadlines. Strategy can also be seen as a *ploy*, a way to try to outmanoeuvre your opponent. "*Here the real strategy (as plan, that is, the real intention) is the threat, not the expansion itself, and as such is a ploy*."(Mintzberg, 1987a: 12) It is also possible to see a perspective of *pattern* in strategies. A strategy can be planned but it is first when it is being implemented that it will be of some use. It is then realized and results in some kind of action, or maybe better - behaviour. The result is that "*strategy is a pattern* – specifically, a pattern in a stream of actions." (Mintzberg, 1987a) It does not necessarily have to be a pattern that is conscious; it is enough with a consistent behaviour. As a *position* the strategy will be used to place the organisation where it wishes to be in the surrounding environment. Companies can decide which niche of the market they want to be active in and try to hold their position with the help of a certain strategy. Positioning is done in relation to other actors in the organisations surrounding and is partly dependent on these actors and their needs and characters. Fifth, and the last perspective, can be said to view strategy as a *perspective* inside the heads of people developing the strategy. It is a shared worldview or rather a shared collective intuition about the world. The world is perceived in different ways depending on which organisation you are based in, i.e. as a stable market or maybe as a turbulent and fast changing market. (Mintzberg, 1987a, Mintzberg et al., 1998)

An important question to answer in the process of formulating a strategy is by natural reasons – strategies about what? A strategy needs to have an aggregated level in order not to become too rigid and focused on details. Are details always uninteresting for the organisation? Details can sometimes prove to be part of important strategic decisions. A constructive approach when selecting which details that should be included in the strategy is to view them as *more or less important*. These perspectives; *plan, ploy, pattern, position, and perspective*, tend to complement each other as example plan and pattern. (Mintzberg, 1987a)

3.1.4. Important considerations

Mintzberg et al. (1998) discusses three important general questions that need to be considered when formulating a strategy. The first issue regards the content of the strategy and its level of *complexity*. The design perspective, for example the SWOT-analysis as a tool, emphasises that a strategy can be formulated in a few simple statements. On the other hand the strategy can be too detailed and hence hinder the organisation to take necessary steps in a certain direction. Mintzberg et al. (1998) cites Boulding (1956) who emphasises the necessity of using a strategy that is between the general and detailed but still designed for a specific purpose. Bouldning's conclusion is obvious from a logical point of view but apparently not always in the world of strategy management, that hardly, according to Mintzberg et al., addresses the issue of complexity. (Mintzberg et al., 1998)

The second issue concerns the question on *how to formulate strategy* i.e. the process. Is strategy a deliberate process, which the design perspective states or is it more of an incremental learning process? These perspectives also differ in the view on how the strategist works i.e. *who formulates* strategy in an organisation, for example if it is a chosen person or a task-group. (Mintzberg et al. 1998)

Thirdly the strategy needs to deal with *internal and external change*. Strategy is often a concept that has its base in stability, not flexibility. The difficulty is to adjust the strategy so that fundamental internal and external changes can be dealt with. Also, in the concept of change it is possible to ask where the new strategies come from and how the organisation will learn from its ongoing business. (Mintzberg et al., 1998) These general considerations on strategy development are the base for our strategy development.

In the next part of this thesis different aspects of the stakeholder theory will be discussed. Stakeholder theory focuses on different stakeholders to an organisations business and the different relations that exist in this network. These considerations are in our case used as a starting point when solving the thesis purpose.

3.1.5. Stakeholder view

The stakeholders of an organisation can both be internal and external. In this thesis the focus is on the external stakeholders. In the stakeholder view the organisation's different stakeholders are central for developing the organisation's strategy. Between different organisations there are relations that take different forms depending on which character the other organisation has, or depending on its role for the other organisations business. It is of interest for the organisation to create a balance between its own business and the expectations of different actors in its surroundings. The stakeholder perspective describes the interests involved in the operation of an organisation based on the organisations relations with different actors. The long-term success of the organisation is based on its ability to manage its relations with other organisations relevant for its business. This can be achieved by understanding the different stakeholders and the relation that the organisation has to them. The competitive advantage of an organisation is to a large extent based on explicit and tacit knowledge about its stakeholders. When the different relations to the stakeholders have been understood the strategy of the organisation can be formulated to manage these relations more efficiently. (Post et al., 2002; Polonsky 1995)

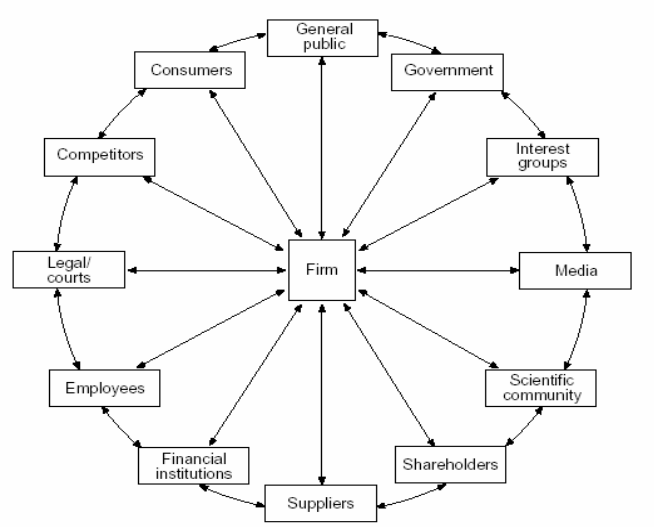
The definition of stakeholder used by Post et al. (2002) is:

> "*The stakeholders in a firm are individuals and constituencies that contribute, either voluntarily or involuntarily, to its wealth-creating capacity and activities, and who are therefore its potential beneficiaries and/or risk bearers."* (Post et al., 2002:8)

From this definition it is possible to include internal resources, for example, individuals as stakeholders. With this definition the number of stakeholders become large and for practical reasons it is suitable to prioritise. For a firm's business the stakeholders that are central often receives more attention compared to the less central stakeholders. According to Post et al. (2002) this is not suitable from a stakeholder perspective as all stakeholders are part of the same single network that the organisation has. In different situations certain stakeholders might be more important but it is important to remember that all stakeholders are part of the same organisational network.

Polonsky (1995) gives a general map on which stakeholders a firm might have. This is shown in figure 5. The description does not claim to cover all the potential actors for an organisation and the description can be modified after a specific context. The arrows between the different stakeholders indicate that they are connected to each other with their own relations, independent of the central firm. Consumers can for example, have connections with the firm's competitors through different products. These interests do not always have to coincide but can also be conflicting making it difficult for the organisation to conduct its business. Post et al. (2002) uses a different model for depicting the basic features of a stakeholder perspective. However, for this thesis Polonsky's model is more suitable since it helps in giving a clearer theoretical picture of the relevant relations for the CI.

Figure 5: The firm's different stakeholders



Source: Polonsky, 1995.

The first phase in the strategy development process, in the stakeholder approach is to identify the different groups of stakeholders and the different issues that might be relevant in these relations. Often the resulting description/map has several alternative designs that can fulfil the same purpose, of describing the organisations business. In a stakeholder map it is difficult to identify all stakeholders and a basic stakeholder map is bound to miss certain stakeholders and relations. In this process the expectations of the identified stakeholders should be identified, in order for these to be met by the organisations strategy. This process is difficult and becomes even more complex if no current communication exists between the stakeholders and the organisation. The different stakeholders will most likely "*not have clearly established policy statements indicating their expectations or needs on specific issues*." (Polonsky, 1995:36) From the communication with the stakeholders, the organisation can then formulate a strategy that suits the organisation's business and the stakeholder's interests, without too large gap between them. (Polonsky, 1995)

A criticism against the stakeholder perspective could be that it misses internal aspects of the firm, for example, how internal resources should be organised. The success of the firm can be partly dependent on alignment with internal and external stakeholders but it is important to remember other aspects, for example, an efficient production or organisation. In Post et al.'s (2002) stakeholder perspective the competitors of the organisations are excluded and it could be necessary to complement the analysis with this in a certain context. Polonsky (1995) however adds the competitors in his analysis of potential stakeholders for a firm. A summary of the strategy theory presented here is displayed in part 3.4. The next part of the thesis is focused on networks and their different aspects.

3.2. Network

3.2.1. Definition of Network

One general definition of network is that, a network consists of a number of independent organisations that together can reach a goal that they can not reach by themselves. There are many definitions of network according to Svensson et al. (2001). It is therefore difficult to find a definition of network that is suitable in every situation and instead a definition can express a perspective tied to a context. (Svensson et al., 2001)

3.2.2. Different models of network

Today there is a development towards organising companies and the society as networks (Castells, 2000). Companies seem to have a need to collaborate in a trust, creating a way that emphasises their mutual interests. According to Zeffane (1995) the reason is the benefit of lower costs and increased opportunities. Many companies establish long-term relationships for mutual benefit with a limited set of suppliers. The result is that the firm stabilizes itself while remaining flexible towards a changing market. Successful collaborations tend to generate lower costs and enhance quality. This development has led to the possibility of small companies to take advantage and help each other. Through connecting flexible small companies in a region with the wide competence and assembled resources of larger companies, a possibility to answer orders is generated. (Svensson et al., 2001) The most common and successful variants of networks are divided into five types presented below. These concepts can be related to the CI's business and the collaborations it aims to create.

1. *Distribution* network, which by definition include production of original equipment and production according to original construction between a customer and its distributors.
2. *Producer* network, which by definition includes all co-production arrangements that makes it possible for producers to bring their production capacity, their financial and personnel recourses, to widen the product portfolio and geographical range.
3. *Client* network, which by definition is manufacturing companies, linked toward the distributors, marketing channels, retailers and consumers in larger global markets or domestic market.
4. *Norm* coalitions that are initiated by potential global trendsetters with the purpose to force as many companies as possible by its owned production or in their norms of communication.
5. Network for *technical co-operation* makes the acquisition of product design and product techniques easier. It also facilitates common development of product and process development as well as sharing general knowledge and R&D. (Castells, 2000)

3.2.3. Contribution from network

Generally network is seen as a structure of connected nodes where the structure decides its characteristics. A network ought to be seen as a totality, were the different parts are related to each other and to the whole network. It is a system of heterogeneous units, which

collaborates even if it is changeable in its nature. Heterogeneity in combination with collaboration makes the essence of the networks function as a dynamic entity. (Lind, 2002)

Networks contain relatively independent units aligned with relations built on trust. These relations can be of different kind (ethical, cultural, political etc). There is a competition within the network, which is a special type of constructive competition. Internal network communication is an important mechanism for enhancing the networks competitiveness towards objects outside the network. There are both competition enforcing mechanisms and competition limiting mechanisms, which together contributes to maintain the innovation incentives on a high level. The production within the network is characterised by flexibility and specialisation, which means adjustability, good communication between the units and a high level of competence. These characteristics favour and facilitate innovations in both manufacturing techniques and production development, which contributes even more to strengthen competitiveness toward external competitors. Communication and trust between units are important components ensuring the spread of innovations within the network. (Lind, 2001)

Companies that belong to one common network are in a dependent relationship with each other. The inner unity might be so strong that there is reason to talk about a homogenous organisation culture. At the same time the network formation is, in relation to each other, a rather closed circuit. The social bond between the partners decides the excepted way of behaviour within the network. If a partner crosses the line for what is permitted the partner will risk to be excluded from the network. (Törnqvist, 1996) The units are in general decentralised and specialised leading to the characteristic of flexibility. The functions of a network contribute with a value to the organisations that are a part of the network. These contributions can be partly linked to the managing organisation's business.

- Networks tend to create *confidence-building* value relations, which contribute to creation of lower transaction costs. A lower transaction cost means lower production cost which leads to better competition situation.
- The relations within the network are personal. *Personal relations* counteract foul play, and absence of foul play contributes to a constructive competition within the network.
- Network *favour communication* and communication facilitates spreading of information. Spread of information tends to encourage spread of innovation. The spread of innovation contributes to that many more participants apply and develop new ideas.
- The spread of information also generates *feedback*. Feedback gives access to fast information on how the applications work, what it was that did not work and how it can be fixed.
- Communication together with trustful relations is a good *foundation* for constructive collaboration. This kind of collaboration contributes to generate a high level of innovation- and production capacity. (Lind, 2001)

3.2.4. Different parts of network

Network can be defined as a structure of linked objects. The way the structure of the network is perceived has consequences on behaviour, attitude and comprehension of the network, both for the stakeholders within the network and for the network itself. Relations are

bindings, objects are nodes and the pattern of bindings and nodes is classified as structure. In definitions of networks, it is common to talk about specific type of relations that binds the nodes together. A few ordinary types of bindings are relations of *transactions* (based on the exchange that exists on a market.), relations of *communication* (based on giving and receiving information) and relations of *power*. With different kinds of bindings you can identify different types or forms of networks. A company network therefore may be built by many different types of network structures. (Lind, 2001)

Lind (2001) refers to Håkansson & Snehota (1995) who have developed a theory that describes three different kinds of existing relations on the market. They state that the relation between two parties on a market consists of:

- Links between activities (*activity-links*), which link together the activity of buyers and sellers.
- Bindings between the actors (*actor-bands*), which bind actors together with each other. For example it can be technical, administrative, social and legal types of bindings.
- Ties between resources (*resource-ties*) that tie together resources of sellers and buyers.

Activity-links establish an activity pattern, which becomes activity network; actor-bands establish groups of actors, which develop, into actor networks and resource-ties make a constellation of resources, which result in resource network. When deciding categorisation of network it is done by specifying, what kind of relations and what kind of actors that are linked together. Actors that have the capability to function in a network can only build a network. The capability is determined by the stakeholder's ability to be affected and transformed by the relations to other actors. The structure of the network affects the way the network is functioning and its traits. (Lind, 2001)

3.2.5. Condition for collaboration

According to Svensson et al. (2001) collaboration is a large step for many companies. Going from acting alone on a highly competitive market, to collaborate with competitors and share corporate secrets is difficult. Therefore it is important to know how relationships in network functions, this is important for the company's motivation and will to collaborate. According to Zeffane (1995) an understanding of relations between organisations is essential to create an efficient collaboration. These relations are often built on social informal contacts. There are four fundamental parts that contributes to create good relationship in collaboration. These parts are; *trust, equal relations, time* and *resources and external support* (Svensson et al., 2001).

Trust:

Trust can be defined as the degree to which the participant in collaboration has a positive attitude towards the other participant's goodwill and reliability. Trust is the confidence in partner's intentions and motives, the sincerity of this partner's word. (Das & Teng, 1998) According to Lewicki et al (1998) the difference between trust and mistrust is that trust concerns expectations of things hoped for and mistrust concerns expectations of things feared. Fundamental for building trust within a network is according to Zeffane (1995) the will to collaborate and non-prestigious relations. Relations that are experienced as secure are a condition for an open and constructive environment. It is essential for the participants to be sure of the fact that the discussion for example "does not leave the room" (Svensson et al.,

2001). Jarillo (1988) states that trust is based on a careful selection of partners for the different relationships. An ordinary way to avoid the time consuming process of building trust is to use already existing relations, since previous long-term relationships often inhabit more trust. Trust is something that develops over time when the relationship is put into practice. (Svensson et al., 2001)

The more trust there is between the actors in a network, the greater risk they are willing to take. Risk sharing and the establishment of long-lasting trust (trough social ties) are what bind collaborating companies together. Processes within the network should have a certain structure to give security and increase the efficiency. One of the sources of trust is control. Control is the participant's ensured belief of the other party's behaviour, which under good control results in no major unpleasant surprises. Trust is especially valuable in an alliance because the participants have to rely on their partner's performance and at the same time be vulnerable to the partner's action. (Svensson et al., 2001)

Equal relations:
To reach an open and positive feeling towards collaboration there has to be socially equal relations, which have to be based on free will. A network ought to be characterised by respect and equality. It takes only one partner with a superior attitude to damage a whole collaboration. Selecting people that create a social equal relation might be difficult. Many studies state that differences between people and between organisations contribute to learning and developing. A complementary to this is that similarities make the collaboration easier. The person who has the role as a project leader has to be on an equal level as every one else. All participants ought to have a feeling of responsibility and involvement in order to be trusted. They also need to apprehend the distribution of work as reasonable and fair. In order to make this work the personal chemistry within a group is important. (Svensson et al., 2001) Problems will occur when the partners are not pulling together in the same direction or have not agreed on how to measure success (Zeffane, 1995).

Time and resources:
One of the most important assets, which the partners commit to the network, is according to Svensson et al. (2001) time. This is time that they otherwise should have spent working with their ordinary activity. Since time is valuable it is important that the collaboration is efficient and well planned with a clear structure. According to Zeffane (1995) the strength of collaboration is depending on how the actors experience the value of the relation. It involves a cost to participate in network and therefore the work has to give something valuable in return (Svensson et al., 2001). The success of any collaboration is according to Zeffane (1995) associated with the partner's ability to be flexible and adjust the collaboration to changes.

External support:
External support is complementary to the network's internal competence on leadership and the ability to lead. When electing a leader for a network an external person can be given the role. Leading a network is both very important and difficult. The leadership can also rotate among the participants in the network. What is important when selecting a leader is that the decision depends on the situation and that all partners accept the decision. (Svensson et al., 2001)

3.2.6. Incentives for entering alliances

Firms are specializing and that brings a need to collaborate and form strategic alliances. Strategic alliances are forms of network were companies are plaited together. What characterise strategic alliances is the fact that they cover specific periods of time, markets, products and processes. One definition of strategic alliances is:

> *"…inter firm co-operative arrangements involving flows and linkages that utilize resources and governance structures from independent organisations, for the joint accomplishment of individual goals linked to the corporate mission of each participating firm." (Sharma, 1998:512)*

Although companies are collaborating in the strategic alliance, competition can still occur in areas that are not submitted in the agreement. Strategic alliances have been relevant within high technological lines of business where the Research and development (R&D) costs has become very high. In areas where innovations are the most important weapon of competition, privileged information has become difficult to reach. To be able to respond to the market demand, two or more companies collaborate with joint contributions to develop a new technique. This is often done by support from the government or other public services. The structure of global high-technological industries is becoming a complicated net of alliances, agreements and joint risk ventures. These kinds of agreements do not exclude an intensified competition. Strategic alliances are an important instrument in the competition of market shares. Since the larger companies are top of the network pyramid of delivery terms, the alliance- and competitive structure also concern their subcontractors. Ensuring a subcontractor to the company or blocking the entrance to network is a weapon of competition that companies often use. (Castell, 2001)

According to Sharma (1998) there are two main theories that explain the incentives of entering strategic alliances. The first one is game theory/transaction cost approach that implies that the main reason to enter strategic alliances is to minimise transaction cost. This approach is mostly relevant to routine situations and to static efficiency. Selection of alliance to achieve goals is the second approach and emphasizes that companies rationally choose an alliance to achieve their goals. Since the participating companies are depending on each other to reach their own goal, both the parties tend to either win or loose. This creates cooperative elements in strategic alliances.

According to Jarillo (1993) strategic networks are more efficient than other principals of production. An activity will be a part of the company's manufacturing process if the internal cost is lower than the price of an external actor plus the transaction cost that comes with the external relation. How does the company create lower transaction cost? According to Jarillo it is created by trust. "*When there is trust, the need of pre-specifying every possible future outcome and of setting up mechanisms to prevent or correct opportunistic behaviour is greatly diminished.*" (Jarillo 1993) The base for trustworthy relations is the intention of an alliance as long-term and long duration. In marketing relations trust contributes both to lower the need for different kinds of expensive control systems and lower elements of unpredictable risk. Network can in this meaning create economical values in production by keeping transaction cost down by trust. (Lind, 2001)

3.2.7. Successful alliances

An alliance that is successful is one that is not prematurely terminated. The success of a strategic alliance is determined by the three factors listed below. These factors are separated by Sharma (1998) into three fields – relational, ethical and institutional.

- *Relational*: understanding and commitment
- *Ethical*: Promise
- *Institutional*: Legitimacy and reputation

Relational factors

Partners in an alliance achieve understanding of each other's goals, resources and competences trough interaction. There are four dimensions of interaction in strategic alliances; *frequency, surface area, variety,* and *the medium used*. Frequent interaction means short time between a consideration and the occurrence of new exchanges. More intensive and regular interaction in alliance contributes to a better coordination of the product, transportation and legitimated activities. There is a relation between frequent interaction between alliance partners and the successes of the strategic alliances. In the beginning of an alliance most of the communication goes trough formal media such as written legal contracts. The interaction spreads gradually along with the development of the alliance. It is shown that interaction through face-to-face communication is richer and offers more accurate information. Interaction creates trust as well as a tacit perspective shared by all parties. Through interaction the partners uncover each other's capabilities and resources. There is a consolidation of the feeling that a continuation with the alliance would be mutually beneficial. (Sharma, 1998) Within a network the actors has to learn how to identify shared goals, obtain consensus and project signs of trust in order to develop and establish the relation (Zeffane, 1995).

Commitment

According to Sharma (1998) the selection of partners are often based on previous partnerships that have been characterised by commitment. Commitment shows a desire to continue to collaborate. When problems occur the participants ought to resolve them through discussions rather than leaving the alliance. The commitment is furthermore shown by the willingness of the partners to invest valuable resources and take a responsible role. In order to select committed partners it is important that a future partner possesses and invests alliance-specific resources. Both tangible and intangible assets such as knowledge, skills and other attributes of a company are transferred in an alliance. One problem that might occur when selecting committed partners is that the resources of a company often are under- or over-estimated by the manager. The partners also have to be willing to pool their resources. Another important aspect to have in mind is that actor's interest for the collaboration tends to vary over time. Committing alliance-specific resources involve cost and risk taking. (Sharma, 1998) As discussed earlier in the chapter the amount of trust is affecting the willingness to take greater risks (Zeffane, 1995).

Ethical factors

Participating in an alliance means making promises, which also define the level of the group's behaviour. Promises are one of the components that are building trust among the partners. It also provides for higher flexibility within the alliance. When a partner is breaking a promise

the punishment can be lost business opportunities and a bad reputation. Promises can be both explicit and implicit; in strategic alliances most of the promises are implicit. Explicit promises are the ones that are made openly to each other and are often formulated in a contract. The contract is important and is functioning as a support in case of disputes. (Sharma, 1998) Zeffane (1995) states that potential conflicts with members of the network can be lessened trough agreements that are carefully drawn up between the actors both formal, as contracts, and informal.

Institutional factors
As companies are collaborating institutional factors are important. Institutional factors are forces that are not linked to the partners themselves. A company's reputation might be enforced if it collaborates with other companies that have a good reputation or a strong label. In the same way the reputation of a network can be destroyed if it includes participants with bad reputation. (Sharma, 1998)

3.2.8. Uncertainties

Uncertainties in an alliance are: goal uncertainty, resource uncertainty, and process uncertainty. Goal uncertainty is the uncertainty concerning similarities and differences in each partner's goal. Resource uncertainty is the uncertainty that comes from not knowing each other in the beginning. The partners, especially the project leader, lack knowledge of resources controlled of the others as well as their importance and usefulness. Process uncertainty is the uncertainty whether how the resources of the alliance can be combined to fulfil its purpose. (Sharma, 1998)

3.2.9. Criticism of networks

Network does not seem to be one organisational form, but several rather different forms with different both positive and negative elements. Problems might occur that will have consequences on the way the network functions. One issue that is difficult to predefine is the design of the structure of a network. The difficulty has to do with the fact that a network is an evolving organisational form. Another important aspect is what the expectations are of the participants and how values are created within the network. This might create uncertainties, which in its turn can have a negative effect on the way the collaboration works. One of the advantages of networks is that they can be highly flexible towards its surrounding. But that is not a general state; some networks can sometimes prove to be stable for change. One fundamental factor of a successful network is equal relations. This is a condition that does not exist in some networks. An explanation is that there might be old participants who exercise their power and has control over central resources of the network. Another negative element is that strong networks might define "right ideas" which rather hinder than promote the creation of new knowledge. Within such network it gets important to express oneself and act similar to the network culture in order to get access to valuable resources and get access to the network it self. This might lead to weakening and questioning the creation of new knowledge since ideas that deviate too much are not allowed. (Stjernberg & Hellgren, 1995)

Within networks informal or formal agreements can be made which might have a negative influence on its purpose. The knowledge on which consequences these kinds of agreements, can have on the collaboration gives the network a chance to identify what it is in the

agreements that creates negative influences. The ability for a company to change is dependent on what present position it has within the network. This position defines the constraints and opportunities and influences its ability to change within the network. Another problem might be the lack of criterions for understanding and deciding the principles for selecting which resources to pool and what participants to involve. The interdependence between the actors makes this developing process difficult. The incentives that drive actors are complementary resources or similar resources. Focus on allocation of limited resources. It is important with clear guidelines for selecting the appropriate organisations. An element in most professional networks is the debate on which should be included or excluded and the criteria for this. (Stjernberg & Hellgren, 1995)

According to mentioned theories there are different aspects, which are important in order to turn networks into successful collaborations. The theory on networks mentioned in this part is to a large extent focused on already existing networks. Still it is of interest for this thesis and context sine it point to which factors that are of importance in networks. Since the CI is depending on its relations to its stakeholders in order to get information on competence and business opportunities, it is essential for it to have knowledge on how those relations can be formulated in a successful way. Another aspect is the degree on how well the collaborations that are created by the CI will function, also depends on what prerequisite they have. A summary of the networks theories presented here are displayed in part 3.4.

3.3. Competence

Competence is a central aspect of the managing organisation's business. Therefore it is interesting to analyse different theoretical aspects of competence that later can be used in the analysis and discussion on how parts of the strategy for the CI could be formulated. To clarify for the reader it is important to mention that competence here is viewed from three different levels/perspectives. The first is competence areas on a regional level that can be analysed with the help of existing theories on clusters. Secondly competence in organisations is often associated with core competencies that are more stable competences over time and the core of the company's commercial competence. The third and last dimension of competence is the discussion what competence really is on a more direct level and how it is displayed in for example assets and capabilities.

3.3.1. Regional competence areas

One way to identify valuable competences and core competences within a region is to start from an overall perspective on which competences a region possesses. In this case the concept of regional clusters becomes relevant to discuss for identification of regional competence areas. Core competences and competence within a region is often produced within existing clusters. Therefore it is suitable to make a brief introduction to the cluster concept. Since Porter is on of the most cited writers within the field of cluster theory it is suitable to start with his writings on clusters. According to him:

> "*Clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (e.g. universities, standards agencies, trade associations) in a particular field that compete but also cooperate."* (Nilsson, Svensson &Wilkensson, 2002 from Porter, 2000:15).

Clusters are often a complex and deep network of suppliers, buyers and consumers in the private and public sector. Many clusters also include substantial public interests on both local and national level in the form of investments and official support. The wine industry in California according to Porter is a good example of a cluster. In total 680 wineries are included in the network and also several thousand independent wine grape growers. The geographical boundaries of a cluster are not always defined by a nations or regions official boundary. Another interesting aspect of a cluster is that it often does not fit into the classical industrial classification systems and codes. This makes it difficult to measure for example the exact implications of a cluster. (Porter, 1998a)

Cluster specific factors

Physical closeness of companies and institutions together with repeated exchange between them fosters an environment of increased coordination and trust. The proximity of actors in a specific field gives the region a high competence in this specific field and a large flexibility for the active companies and institutions. Being a member of a cluster gives a company the opportunity to enhance its productivity in several ways. Inputs can be sourced in a better way and information for the company's business is more available. This is also the case for factors like technology and R&D. According to Porter the cluster plays an important role in stimulating innovations within the companies in the cluster. As a final factor clusters give rise to new business formations since many new companies grows up within already existing clusters. (Porter, 1998a) The foundations and the competitive success for the cluster come, according to Porter, from a mixture of four different factors on a national and regional level: factor conditions, demand conditions, related and supporting industries and firm strategy, structure and rivalry. (Porter, 1998)

A cluster has often a long historical background even if the content and specialization of the cluster tends to change over time. The same region often continues to be a cluster in a self-reinforcing cycle, as long as the local institutions and competition is supportive. (Porter, 1998a) Despite its popularity the cluster concept is not always as waterproof as it can look.

Criticism against the cluster theory

The main criticism against the theories is of mainly two types. First, the theories tend to be *vague on the definition* of what a cluster really is. Second, the *connection between the theoretical positive effects of clusters and how reality appears,* are difficult to prove. Nilsson et al. (2002) and Martin & Sunley (2003) discuss the cluster definition based on a series of literature studies. Their first comment refers to the geographical reach of the cluster. The definition of a cluster's size varies from a part of a town, a town and up to multinational level. It is difficult to find a meaningful answer to how large a cluster should be in order to identify cluster specific advantage. One of the denominators for a suitable geographical size of a cluster is that it has some kind of dynamics that promote innovation, something that becomes more difficult as distance increase. Another comment concerns the fact that it is not specified how many actors a cluster needs or what kind of economical measures that should be used in order to determine progress. For the concept to be valuable it requires some kind of critical mass but it is difficult to determine any exact measures. (Nilsson et. al. 2002)

Besides these defined problems another big problem remains, i.e. to be able to determine negative or positive effects of clusters. Martin and Sunley (2003) claims, with the support of

other research, that it is very difficult to prove quantitative positive effects in specialized clusters as for example higher innovation rate or economic growth. The vague definition of cluster and the number of different theories that exists makes it possible to see clusters almost wherever the observer wishes to spot one. "*The existence of clusters, appears then, in part at least, to be in the eye of the beholder – or should we say, creator"* (Martin & Sunley, 2003) To be able to analyse the regional economy with the cluster concept might give interesting information about how the regional economy is structured. But it is difficult to categorically claim direct and positive economic effects deducted from statements in cluster theory. (Nilsson et. al., 2002; Martin & Sunley, 2003)

After have identified the difficulties with competence areas on a regional level the thesis will make a quick jump to a discussion of core competences. The debate on core competences has to a large extent been focused on trying to identify competences that create a competitive advantage for a company over longer time-period. Since the thesis is discussing different aspects of improving the spread of valuable competence through a CI it is relevant to have a discussion on core competences.

3.3.2. Core competences

A firm has according to Hamel and Prahalad (1990, 1994) certain *core competences* that are central for being successful. Firms can have a range of different products that originates from a central competence. The core competence is more to be seen as a collection of skills rather than a specific product, a collective learning. Core competence is the sum of employees' experiences and business units. The numbers of competences are usually something between 5 and 15. Suitable for the definition is also that the competence has a possibility of being used in several different industries. It should open up the window for several new markets. An important dimension of this is that the competence changes over time. What used to be a core competence 5 years ago can today be present in the whole industry.

These competences can be identified using three criterions. First of all the competence should provide an access to *vide variety of markets* for the firm. This implies that long-term investments might be necessary for achieving market success. Still the investment should be directed towards already existing competence that has a potential for development both for the market and the company. Second it should make a significant *contribution to the customer's perceived value*. The customers should be offered an advantage compared to other products. As third criteria the competence must be *difficult for eventual competitors to imitate*. This implies a level of uniqueness in the competence. It is not necessary for the technique to be present only in one company but it is not a core competence if it is spread in the whole industry. This discussion on core competences influences the formulation of the organisations strategy. It is a central part of strategy formulation to identify core competences and focus on them in order to be successful in the future. (Hamel & Prahalad, 1990, 1994) Mintzberg et al. (1998:219) discusses the definition given by Tampoe (1994) on what a core competence is. A core competence must be:

> "*Essential to corporate survival in the short and long term, invisible to competitors, difficult to imitate, unique in the corporation, a mix of skills, resources and processes, a capability with which the organisation can sustain over time, greater than the competence of an individual, essential to the development of core products and eventually to end products, essential to the*

implementation of the strategic vision of the corporation, essential to the strategic decisions of the corporation… marketable and commercially valuable, [and] few in number"

The definition of core competences might be fairly simple and general. Difficulties arise however when these core competences should be identified.

3.3.3. Identifying core competences

Core competence is in certain aspects associated with the concept of sustainable competitive advantages (SCA). According to Aaker (1989) SCA are founded on assets and skills within a company and determines the success of the company. In the process of identifying SCA:s it is possible to identify important competences that can be used to understand which core competence the company has.

When *benchmarking* a company towards other companies and the industry, in which they are active, it is possible to notice which parts of the companies activities that are better than the corresponding companies. Core competence is in this perspective a relative entity visible in a comparison with the industry average. A skill or asset that all or a larger number of companies have cannot be regarded as an advantage. Besides having a unique skills or assets this differentiation should be valued by the customer. (Aaker, 1989) This value might be present in the actual products that a company produces. Value is measured in a created high business value for the product. Aaker also mentions different mobility barriers as for example "*product quality reputation, name recognition, and customer service/product support.*" Questions to be asked are when defining the assets and skills in a company are:

- Which are the successful businesses over time?
- What assets or skills have contributed to their success?
- What are the key customer motivations?
- What is really important to the customer?
- What are the key components providing value for the customer?

Linton and Walsh (2001) have conducted an extensive research on identifying and analysing firm and industry specific competence. According to their opinion core competence has proven to be difficult to identify and manage. The definition given by Hamel and Prahalad (1990, 1994) is simple but difficult to make operational. Linton and Walsh start from the division of core competence into technological and managerial competences. A distinction can be made between firm specific competences, that are technological, and skills related to production, and capabilities that are business practice, process and culture. Like Aaker (1989) Linton and Walsh perceive competences as something relative between companies. With the previous definition on core competences only a few companies would fulfil the criteria of having core competences. Most firms still have competences that are applicable at least to different products and industries. The difficulty in identifying core competences arises from the hierarchical and multidimensional character of competence itself. The basic building block for core competence is to identify which competences that provide a value in a single market. Identifying core competences in an industry is therefore a long and resources consuming process. The analysis is dependent on the purpose of the technical survey and this should guide the mapping of the core competences. In order to achieve a cost efficient mapping Linton and Walsh (2002) suggest an investigation consisting of two steps.

> *"(1) An examination of industry forecast, technical roadmaps, and trade publications will identify many of the technical competencies associated with the industry. (2) An examination of either the SOPs [Standard Operating Procedures] or a detailed consideration of the process of a few leading firms identifies additional technical competencies that would be missed if the literature alone is considered."* (Linton & Walsh, 2002: 75)

This process should be complemented with the invitation of industry experts that can verify or correct the identified core competences. Finally industry specific companies with these core competences can be identified through further work. Through a process of snowball sampling other companies can be identified and eventually a triangulation of the companies within the industry has been formed. Hence, a map of industry specific competences has been constructed. Before conducting a mapping of competence in selected organisation it is important to know more about the deeper dimensions of competence and knowledge.

3.3.4. Dimensions of knowledge

The most common dimensions of knowledge within the field of knowledge management are divided into two basic dimensions - tacit and explicit knowledge. Tacit is deeply related to action and regarded as a form of internal knowledge within an individual. It is therefore difficult to transfer and communicate to other individuals. Explicit knowledge is related to knowledge that can be clearly articulated in for example books or codified in other dimensions. (Polyani, 1966 from Nonaka, 1994) The practice of using a bicycle is a simple but good example of the difference between the two types of knowledge. To be able to do the actual cycling is regarded as an action that cannot be taught by just being explained. The knowledge on how to bike is tacit since it is acquired through personal experience. The formulation on how to do it in for example spoken or written words would be regarded as explicit knowledge.

A work-related perspective on tacit and explicit knowledge is used by Choo (2000). The explicit knowledge is formally expressed in symbols and it is then possible to communicate to other people. A distinction is made between object-based or rule-based explicit knowledge. The *object-based* can be identified in for example products, patents, databases, films, technical drawings etcetera. *Rule-based* knowledge is on the other hand codified into rules, routines or operating procedures within an organisation. The explicit knowledge within an organisation has mainly three contributions.

> "*First, they encode past learning in artefacts and rules. Second, explicit knowledge facilitates co-ordination between disparate activities and functions in the organisation. Third, exercising explicit knowledge signifies technical skill and procedural rationality, and so helps the organisation to present a self-image of competence, legitimacy and accountability."* (Choo, 2000:396)

When explicit knowledge has been codified it can still be used by others in the organisation if people live it and knowledge is not lost.

3.3.5. Creation of knowledge

Within an organisation knowledge is created as an interaction between tacit and explicit knowledge. Ideas are created at the individual level but are facilitated by the interaction

between individuals. This interaction also leads to the creation of knowledge at the individual and organisational level. *Self-organised groups* within an organisation facilitate the sharing of knowledge. The group builds up trust, which leads to the creation of a common perspective among the individuals within the group. Knowledge is later shared and developed through continuous dialogue between the group's members. This efficient/effective creation of knowledge leads in the long run to the creation of core competences within the organisation. (Nonaka, 1994)

Knowledge is often dynamic, complex and difficult to make explicit. Formalising and transferring knowledge from tacit to explicit is a complex process due to the nature of tacit knowledge. Stenmark (2001) describes three reasons to the difficulties with the formalisation. The first is that knowledge is *elusive* and something that we often are not aware of our selves. Secondly there is usually *no need to make it explicit* on an individual level since there is little for the individual to benefit from making it explicit. Thirdly there is often a *risk of loosing power* and an advantage towards other by making knowledge explicit and easily transferable.

3.3.6. Work related competence

According to McClelland (1973) competence is to a large extent a relation between humans and there work tasks. Knowledge and skills that are used for solving a specific work task efficiently is associated with competence.

One definition of competence put up by Sanchez (2002) is that "*Competence is the ability to sustain the coordinated deployment of assets in ways that help a firm achieves its goals*." It is identified as a hierarchy of activities based on three levels from the three concepts – *assets*, *capabilities* and *skills*. Assets are tangible or intangible resources used by a company for creating, producing or offering a product to a market. The capabilities of a company are repeatable patterns of use of the existing assets to create the desired results. Capabilities are thus the result of a co-ordinated use of people in groups. Skills are embedded in individuals or teams and are "useful in specialized situations". These three levels interact in the creation and leveraging of a company's competence.

The definition of competence puts up the most essential aspects of organisational competence as "*dynamic, systemic, cognitive* and *holistic"*. Competence as dynamic is a result of the organisations needs to respond to a changing external and internal environment. An organisation's interaction with other organisations requires the ability to co-ordinate its activities and competence and thus relate to the systemic nature of its surrounding. In the cognitive process the managers of the organisation is responsible for managing and optimising the use of the organisation's resources. (Sanchez, 2002) An understanding of what competence is and which competence that is relevant for the context is essential for mapping it correctly (Hansen et al., 1999). The information on competence intended for the CS is connected to object based knowledge. This is evident since the competence that is to be mapped need to be clear and possible to communicate. In some cases there will be a need for making knowledge explicit and an understanding of the concepts of knowledge and competence is therefore important.

The traditional work related view on competence are according to Sandberg (2002) connected to a rationalistic view on competence. This divides the view on competence into a worker-

oriented, a work oriented, and multi-method oriented view. Common for theses three perspectives is that they view competence as consisting of different specific *attributes* that the workers use for completing there work tasks. In this thesis the focus is on the work oriented view on competence were the definition on a specific competence starts from the work activities. The activities needed for a task are identified and after this identified with personal attributes. This generates detailed descriptions on which competences that are needed. Criticism against this perspective is that it can generate to abstract and simplified descriptions of competence. Related to this problem is the difficulty in description capturing how the task is completed and if the competence is really used. (Sandberg, 2000) Central for the CI are the specific work activities that are central in an organisation for example producing a unique product.

3.3.7. Managing knowledge

Trying to formalise and codify knowledge in different kinds of knowledge management systems can often be complicated. Hansen et al. (1999) describes several cases were companies have tried to formalise knowledge and transferred it into different systems. Often the effort has proved to be *costly, time consuming and not leading to the desired effects* for the company. This is partly because of the nature of knowledge as described above and also an effect of a lack of insight into how complex knowledge can be within an organisation. These general conclusions on the difficulties with systems for managing knowledge within organisations are supported by the work of Lindgren (2002). Based on this it is imperative for a company to have a clear knowledge management strategy, a clear concept on what knowledge is, how it is retrieved and how it is stored.

Central to all knowledge management is the creation of the right *incentives* for people to share their competence to the system. A knowledge management system should also contribute to the organisations business and not be a purpose by itself. Before implementing a system it is relevant to analyse what the organisation's underlying business is and its needs i.e. which products are supplied. The complexity of the product should be analysed and does people rely on explicit or tacit knowledge when managing the business. A knowledge intensive company is in a bigger need of a system and its business is more dependent on an effective/efficient system. (Hansen et al., 1999)

Kempler and Idinopulos (2003) states that the classical ways of storing information through databases and reports, are often not a help for a company when trying to identify the right competences for a specific project. As the authors states the context of the situation determines what to ask for. The expertise that is required depends on who is asking and what the information is supposed to be used for. Often the social network can help in identifying the right person or information, but in larger organisations a knowledge management system can be used. However, before designing and implementing the system it is *imperative to understand which competence you want* from the system when doing the search and what it should be used for.

3.4. Summary of theory

3.4.1. Strategy

Within the field of strategy development multiple definitions of strategy exists. A definition of strategy is often related to the context of the strategic problem in hand. It is also possible to have several different strategies parallel to each other. (Mintzberg et al., 1998a; Quinn, 1980a) Important considerations discussed by Mintzberg et al (1998) are also the level of complexity of the strategy, how it is formulated and its need to deal with internal and external change. The more concrete aspect of strategy formulation in this thesis is based on the theories on stakeholders. Stakeholders are individuals and constituencies that contribute to a firms business (Post et al., 2002). Polonsky (1995) presents a map on which different stakeholders that a company can have. This general map is open for modification depending on the purpose of the stakeholder analysis.

3.4.2. Network

The networks can contribute with and facilitate the creation of confidence building relations, personal relations, communication, feedback and a foundation for deeper collaboration (Lind, 2001). Often the relations within a network are built on social informal contacts. There are four fundamental parts that contributes to create good relationship in collaboration. These are trust, equal relations, time and resources, and external support. (Svensson et al., 2001) The general reasons for participating in collaboration are according to Sharma (1998) divided into two main disciplines: game/ theory or transactions cost approach and goal achievement. In order to succeed in the second aspect of achieving goals Sharma (1998) points to the fact that a successful collaboration is dependent on relational, ethical and institutional factors.

3.4.3. Competence

A regions success within a specific economic area can be described by its success with creating clusters. A cluster is concentration of organisations and institutions, within for example a region, which is structured in a way that economic development is facilitated. (Porter, 1998a)

Hamel and Prahalad (1990, 1994) discuss a company's core competences as factors that contribute to the company's success. A core competence should help the company in providing access to a *vide variety of markets*, *contribution to the customer's perceived value* and it must be *difficult for eventual competitors to imitate*. The process of identifying core competences on a regional level are developed by Linton and Walsh (2001) and can start from an analysis of cluster specific information.

Within an organisation the characteristics of competence are described by several authors (Choo, 2000; Nonaka, 1994; Sanchez 2002, Sandberg, 2000; Stenmark, 2001). These authors' discuss the tacit and explicit parts of competence, the incentives for the individual when it comes to displaying competence, and the dynamic nature of the concept. Hansen et al. (1999) describes several cases where companies have tried to formalise knowledge and transferred into different systems.

3.5. Research model

3.5.1. Stakeholders

The research model is based on the different theories in the previous parts, 3.1, 3.2, and 3.3. The selection and modification of theories have been done to adjust the theories for the research purpose of this thesis.

Strategy is potentially about everything within an organisations business, but it is inevitable that some things are more important than others (Mintzberg, 1987a). Hence it is suitable to focus on a part of the organisation's business to formulate an initial base for the overall strategy. As a *position* the strategy will be used to place the organisation where it wishes to be in the surrounding environment. Companies can decide in which niche of the market they want to be active and try to hold their position with the help of a certain strategy. Positioning is done in relation to other actors in the surrounding of the organisation. It is partly dependent on these actors and their needs and characters. (Mintzberg, 1987a) The positioning perspective is closely linked to different relations and stakeholders relevant to the organisation's business. The CI has the possibility of positioning itself towards regional actors.

In stakeholder theory different stakeholders of the organisation are identified from the needs of the business of the organisation. The organisation has different relations to these stakeholders and must adjust its business and strategy to the specific relations. Interests between stakeholders do not always have to coincide and can be conflicting, making it difficult for the organisation to conduct its business. (Polonsky, 1995) In Post et al.'s (2002) stakeholder perspective the competitors of the organisations are excluded and it could be necessary to complement the analysis with this in a certain context like Polonsky (1995) does. For the business of a firm the most important stakeholders often receives more attention compared to the less central stakeholders. According to Post et al. (2002) this is not suitable from a stakeholder perspective since all stakeholders are part of the same single network that the organisation has. In specific situations it is acceptable to focus on different stakeholders and the needs of the specific problem. According to our opinion the reality that firms face, automatically leads to the fact that firms are forced to make priorities in the attention they give to different stakeholders. In the long run the importance of giving attention to the whole network should not be underestimated but when the organisation, as in our case, is new and lacks an existing network it might be suitable to start with a few stakeholders.

3.5.2. Network

Within most network theories it becomes obvious that the need for collaboration between organisations has become greater over the years. This is explained by Castells (2000) as a parallel process of the changes in the society. There are according to Castells (2000) five different kinds of networks in the leading lines of business; distribution network, producer network, client network, norm coalition and network for technical collaboration. The design is decided on the organizations need for collaboration, which can be all five kinds of networks. The goal of the Competence Intermediary is to generate collaborations between organisations within the region most likely through a network.

The networks function determines the value that it contributes with. Potentially the networks can contribute with confidence-building relations, personal relations counteracting foul play, stimulated communication and related transferring of information. Additional to this is the generation of feedback and a foundation for further collaboration. Lind (2001) mentions that the links between the organisations within a network can be of different overlapping types as; activity-links actor-bands and resource-ties. (Lind, 2001)

In order to make a successful collaboration it is important to know how the relationship functions within a network (Svensson et al., 2001). The focus is here on the four parts: trust, actual relations, time and resources and finally external support. In addition to this it is important to mention the different incentives, which organisations have for participating in a network. There are two main theories that explain the incentives of entering strategically collaborations (Sharma, 1998). These are game theory/transaction cost and selection of an alliance partner for achieving a goal. In the last perspective the focus is on different relational, ethical and institutional aspects that are central for a successful alliance. Even if these results are for alliances they are valid for other types of collaborations since the same basic mechanics are active. According to Zeffane (1995) and Jarillo (1993) the main reason for an organisation to entering collaboration is to lower the transaction costs.

3.5.3. Competence and management

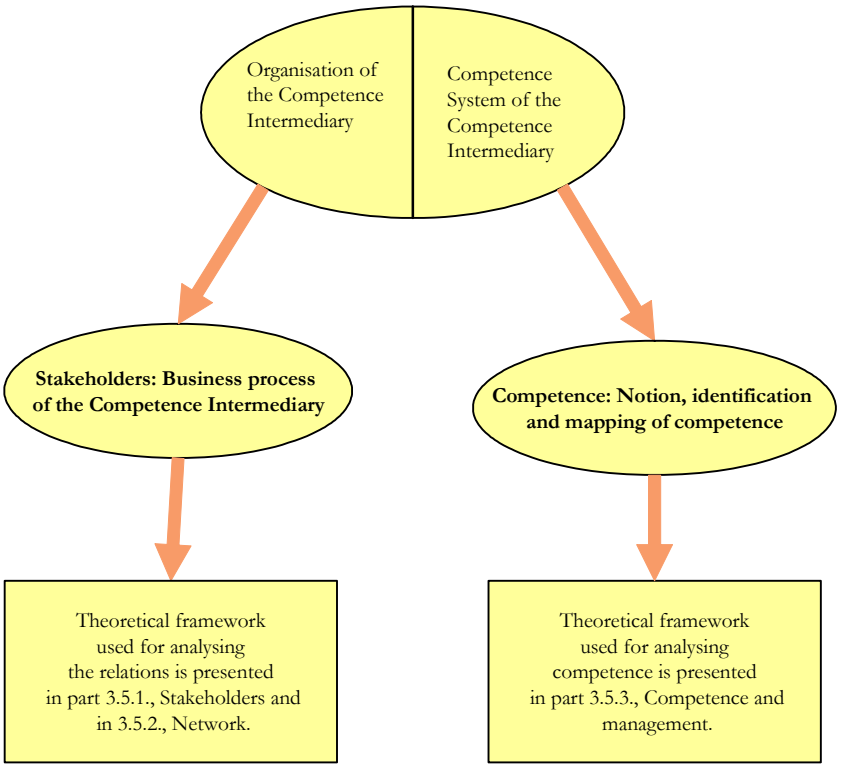
In our case an articulation of the CI's basic concept can contribute to create an understanding of its business and how its strategy better can be adopted to the requirements of the business idea. In the bottom of the CI business the concept of competence is highly relevant. It is possible to partly view the information on competence intended for mapping as explicit object-based knowledge as described by Choo (2000).

Competence is a complex concept with multiple dimensions as assets, skills and capabilities (Sanchez, 2002). Competence contains a large amount of tacitness, which makes it difficult and resources demanding to formalise. Our general view on competence is that it normally resides within individuals, active within an organisation and its assets. In the long run this process results in the creation of core competences within the organisation (Nonaka, 1994). Central in identifying competence for the CI's CS is the ability to finding work related competences that are based in activities (Sandberg, 2000). Core competences as discussed by Hamel and Prahalad (1990, 1994) should lead to a *vide variety of markets* for the firm, *contribution to the customer's perceived value* and it must be *difficult for eventual competitors to imitate*. Tampoe (1994) further describes the criterions for core competences but still no clear operationalisation is visible. Walsh and Linton (2001) describe a theoretical framework for analysing core competences that are industry specific but this framework can also be used to map specific companies with core competences. This analysis can start by identifying different *clusters* within a region, as identified by Porter (1998a). These clusters are often the result of a long historical process and a regional mapping of commercially viable competences might then start from relevant regional clusters. As Kempler and Idinopulos (2003) states the level and type of information on competence, that is needed, is decided by the context. The information on competence relevant for the CI's business could then be perceived as something between core competences and specific competence.

3.5.4. Model

Based on the theoretical discussions in chapter 3, a research model has been constructed and is presented in figure 6. The general business model of the CI combined with the theory has led to that certain stakeholders have been identified. These are represented in the external relations that the CI has and are presented in figure 6's left part. These relations have been selected with the help of stakeholder theory and analysed with network theory. Internal factors of the managing organisation as previous mentioned is the notion of competence embedded in organisations designated for the competence system. The concept of competence and its relevance for the CI is analysed based on theory from existing literature on competence, core competence and clusters. The notion of competence and the different theoretical aspects are presented in the right part of figure 6.

Figure 6: Research model



4. Research Method

This chapter will describe different research approaches, collection of data and the different methods that can be used for this thesis. Through the chapter the methodological aspects are related to the methodological difficulties with this specific thesis. Finally a discussion of selection of the method and sample will be held.

4.1. Research approaches

Kinnear and Taylor (1996) as well as Lekvall & Wahlbin (1993) identify three different types of research approaches that come into different stages of the market research process: exploratory, conclusive, and performance-monitoring research. The different stages in the process determine which kind of approach that needs to be focused on. Two of them, exploratory and conclusive, are covered in this part.

The first type is the *exploratory* research that is most appropriate for the early stages of the development process. During this stage it is important to identify and define the problem to be investigated. Formulation of the questions to be answered and the necessary variables to answer the questions are central. Also of importance is to prioritise among the problems, create a consensus among the management about the questions, and gather additional information about the problems. In doing this the investigators can use a wide variety of secondary and primary data, as for example group interviews and observation. The *conclusive* research is more to provide the information necessary for evaluating and making a decision about what can result in action. In this stage the problem should be clearly articulated and the information need specified i.e. a sampling plan, surveys etc. The conclusive part can be divided into two main parts, descriptive research and casual research. (Kinnear & Taylor, 1996)

This thesis is focused on identifying problems with the general business idea and the concept of competence combined with creating a strategy based on this. The CI and its business are in an early stage of development. With this in consideration an exploratory approach combined with a conclusive will be used.

4.2. Collection of data

The sources of the information, used to draw conclusions from, can be divided into two categories – primary and secondary data. *Primary* data is previously not published information collected for the specific situation by a method that is designed for this specific collection. An example of this is a postal survey about a certain consumption pattern. Disadvantages with primary data collection is that it is often time consuming and an expensive way of finding information. *Secondary* data is divided into internal and external source, internal being data that comes from within the organisation itself i.e. for example budget figures. External data is often more diverse and comes from a wide variety of sources. As an example we have official statistics, scientific publications kinds etc. Disadvantages with the *secondary* data can be that it is difficult to fit to the existing problem and the current information needed. Another essential point is the reliability of the data. Some sources must be regarded as more doubtful

than others and it is therefore imperative to be critical. (Kinnear & Taylor, 1996; Lekvall & Wahlbin, 1993)

The thesis will use both secondary and primary data. The primary information used originates mainly from communication with respondents from selected organisations. Additional information of the primary character is from a workshop that was held during week 38 on a conference on regional development. A number of workshops where held before and after this event with selected consultants, in order to retrieve additional information for the purpose. Secondary data in this thesis is information gathered from articles, books, and statistics that are perceived to be relevant for the purpose of the thesis. Within the project group other collections of data where done, mainly through interviews. In this thesis that material is used as a secondary material. The reason for using primary data in this thesis is based on the difficulty of finding secondary data that is suitable for answering the purpose of the thesis.

4.2.1. Reference system

According to Backman (1998) there are three main reference systems, which are used in scientific reports. These are the Harvard-system, the note-system and the number system. In this thesis we have chosen to use the Harvard-system, which is the most common system within social science. Here the writer refers to its reference in the text either; by in parenthesis write; the author's last name followed by a comma and the year of publication for example (Lindahl & Lindström, 2004) or by writing the authors name and after that within parenthesis write the year of publication for example "Lindahl & Lindström (2004)…" or by writing the year of publication followed by the authors name for example "Year 2004 Lindahl & Lindström published….". This system gives the reader information of where the publication can be found in the bibliography, since it is in alphabetic order. (Backman, 1998)

4.3. Method for collecting data

The collection of data is done from qualitative and quantitative perspectives that if necessary can be combined. These perspectives result in different techniques for gathering information i.e. interviews, observations etc. After this comes the formulation of questions.

4.3.1. Qualitative vs. quantitative approach

There are two general starting points when looking at methods for collecting data. The *qualitative* approach is often associated with the explorative approach. A *quantitative* approach is intended to measure a problem in statistical terms and is associated to the conclusive research. The technique often uses more complex tools for analysing the data and then depicts it in statistical terms. A common method used in the qualitative approach are different kinds of in depth interviews, individual or group. The characteristic of the technique is that it operates with a small quota sample. The information that is often looked for are more focused on the values and motivations of the respondents. When gathering the information the approach has a larger subjective part compared to the quantitative approach in the same time, as the collection format is open-ended. The aim is therefore not to display the result in statistical terms. (Kinnear & Taylor, 1996; Lekvall & Wahlbin, 1993) Since the CI is on an early stage of its development a qualitative approach will be used for answering the purpose

of the thesis. Development of strategy from identified problems is a complex process involving a great deal of deeper understanding of difficulties. This complex process further motivates the use of a qualitative approach.

4.3.2. Different techniques for collecting information

In order to gather quantitative and qualitative data different techniques can be used. The more concrete basic sources of gathering information are: *respondents, analogous situations, and secondary data*. Information through *respondents* is coming from observation or communication. The communication requires that the respondent actively gives out information and the observation lets the respondent to be passive. The methods used in communicating with a respondent include interviews in person, group interviews or through telephone and questionnaires. (Kinnear & Taylor, 1996)

Analogous situations include the study of similar situations through case histories or simulation. In the case approach relevant variable are identified together with the relationship among these variables. These variables will through an analysis give a better understanding of the variables operation and hence a possibility for the firm to act. The case approach is most useful in situations where complicated variables interact. The data necessary for case analysis can be found through records and reports. Another aspect of the analogous perspective is the use of simulation. Through the use of for example computer systems and input of variables and relationships different outcomes of a market reaction and be tested. (Kinnear & Taylor, 1996)

Interview

An in-depth interview is regarded as a qualitative approach to gather information from individuals or small groups. The purpose of the interview is to get the respondent to give more detailed information about the questions being discussed. This makes it difficult to steer the interview and therefore the interviewer only specifies certain key areas for discussion and has a fairly unstructured interview guide. These areas are then used to probe deeper to achieve an understanding of the general question. The role of the interviewer is more important than in a quantitative survey. It is important that the interviewer is well prepared, build confidence with the respondent and has a sensitive ear. The positive aspect with an interview of this kind is that it gives a deep insight into the problem. Disadvantages are that it takes a lot of time, is expensive and difficult to quantify. (Kinnear & Taylor, 1996) Using group interviews in the form of workshops can also create a respondents opinions and an understanding of qualitative problems. In these workshops the interviewer has a possibility to discuss different solutions to presented problems and interact with the respondents in examining different aspects of the problem.

4.3.3. Formulating questions

Communication with respondents is dependent on well-formulated questions for it to be successful. Questions can be used to measure past behaviour, attitudes and characteristics in respondents. The first undertaking when constructing the questionnaire is to formulate questions relevant for the purpose of the research, something that often is difficult. It needs to be a clear link between the information need and the data collection. The formulation of the questions and their content decides what kind of answers that will be received. Certain

topics might be sensitive to discuss and the respondent might distort or avoid answering these questions. Different possibilities to interpret the questions might lead to misunderstanding and useless data. (Kinnear & Taylor, 1996)

The main choice of questions is to have open-ended or multiple-choice questions. The open-ended questions allow a free answer on the question. The disadvantage with this is the risk of the interview only recording some parts of the answer. Another important aspect is the time and cost associated to this type of questions. A multiple-choice question forces the respondent to choose from a list of answers. The disadvantage with this is that it is difficult to design effective questions that give right answers. (Kinnear & Taylor, 1996)

4.3.4. Selection of method

According to Kinnear and Taylor (1996) there are several 's that needs to be analysed before selecting an appropriate communication approach. These are versatility; cost time, quantity/quality of data and sample control that should be adapted to the purpose of the study. Versatility is linked to the possibility of adapting the data collection process to the study's needs. A personal interview has for example a high versatility since it involves a face-to-face communication.

Since the thesis has more of an explorative approach, in-depth interviews with respondents were used. This selection is motivated on the previous discussion of Kinnear and Taylor's (1996) methods for doing research. This is supported by Lekvall & Wahlbin (1993) that states that qualitative interviews are often suitable to solve problems of a more explorative nature. By using open-ended and semi-structured interview guide the respondents are allowed to further develop their answers.

An *interview guide* can be used for gathering necessary primary information for the analysis of the research purpose (Kinnear & Taylor, 1996). When conduction qualitative interviews it is suitable to use an interview guide (Lekvall & Wahlbin, 1993). In the appendix in the end of the thesis the interview guide used is published. Based on this, the first part of the thesis is the study of secondary material for analysing the research problem, and creation of a theoretical base for an answer to the purpose of the thesis.

4.4. Population and sampling

A sample is the part of the study population that the research plans to cover. Sampling is used to save time, money and to make the study more accurate. (Kinnear & Taylor, 1996; Lekvall & Wahlbin, 1993) An inadequate sampling, on the other hand, could ruin the whole research.

4.4.1. Method of selection

Probability and non-probability sampling are the two fundamental concepts of sampling. In a probability sampling all the elements of the population has a known chance to be selected. When using a non-probability sampling the researcher is doing the selection on a judgement. It is therefore not a known or equal chance for the elements in the population. Considering the purpose of this study a probability sampling would not be suitable. The rest of the part will therefore deal with non-probability sampling in the form of judgment sampling. Other

forms of sampling are for example convenience sampling that is done on the basis of convenience for the researcher. Sampling of this kind is based on what an expert sees as a suitable sample for the answering of a question. As an example a certain test market can be chosen on the basis of what an expert finds best. This sampling method can prove to be better than the convenience sampling if the expert has a valid judgment. It is important to consider which qualifications the sampled entities should have. (Kinnear & Taylor, 1996; Lekvall & Wahlbin, 1993)

With this taken into consideration the approach in this thesis has been to use a judgment sampling. The relevant organisation examined was contacted on the basis of recommendations from experts within the field. According to Lekvall & Wahlbin 1993 it is not possible to set a number for how large the sample should be when a judgment sample is made. This should be decided with the purpose of the research in mind. The method for selection has been conducted together with the CCI where the project leader and different regional managers have been involved. Also discussions have been held with different other regional organisations for choosing the organisations that might be able to give suitable empirical data. A list of organisations interviewed is published in the end of the thesis proposal.

Based on the description of the general organisational idea for the CI and the problematisation a selection of relevant organisations was made. For the empirical part 10 organisations was selected for depth interviews. An additional method used for answering the purpose has been workshops. 4 workshops with extensive discussions were held with invited consultants specialised in relevant areas for the project idea. One workshop was held during week 38, 2003, at the TCI-conference, an international conference on regional development. The dates for the other workshops are listed in the appendix.

4.5. Evaluation

All research contains a certain amount of errors that influences the result. It is therefore important to take the different kinds of errors into consideration when conducting the research and also when analysing the result. This section will present some aspects of this process.

4.5.1. Evaluation of results

Kinnear and Taylor (1996) claim that every piece of research contains errors of some kind that can result in serious misinformation. It is therefore important to identify the potential sources of error. The basic sources of error are: sampling errors, which regards selections of people, products etc that the study utilizes. Non-sampling errors are problems with, for example, a faulty problem definition or defective population definition.

Added to this is also errors conducted during interviews. The interview is a situation with a social relationship between the respondent and the interviewer. In this interaction it is possible for misunderstanding and lack of adequate communication. If for example the respondent does not feel comfortable during the interview or feels that the questions are sensitive it is a high risk of failure. When documenting the interview it is a risk that valuable

information might be lost. This risk can be minimized if a tape recorder is used to document the interview. (Kinnear & Taylor, 1996)

Sources of error are divided, by Lekvall and Wahlbin (1993) into three main categories. *Inference* is to be able to draw conclusions from the target population on the basis of the examined sample. These errors can be divided into three categories: errors of frame, errors of dropout rate, and errors of selection. These problems occur in principle in all research where the result is generalized. *Measuring errors* are another error that needs to be accounted for. These errors are based in the registration of the data collection process and are: Respondent errors that are dependent on the ability of the respondent to give accurate answers, instrumental errors due to the design of the measuring instrument, and finally an interviewer effect based on the competence on the interviewer and his/her effect on the answers or registration. *Handling or interpretation* of the information can naturally also cause errors. Handling the data and transferring the result into editable form can lead to serious mistakes. Analysis and calculation of the raw data might produce wrong conclusions. It is also possible to simply draw the wrong conclusions of the calculation result. (Lekvall & Wahlbin, 1993)

Two of the more serious errors that can occur are those of validity and reliability. Validity determines whether the method for measuring the result really measures the qualifications that are intended to measure. This problem can be dealt with by analysing the questions asked in for example the interviews. Reliability determines how much the method of measurement is influenced by randomisation. An interview with a person should for example generate close to the same result every time in order to give it a high reliability. (Lekvall & Wahlbin, 1993)

4.5.2. Our study

The empirical data in this study is analysed in relation to the thesis purpose. The interviews were recorded on tape and by taking notes on important topics. After the interviews the authors discussed the most important topics briefly. The taped interviews were scanned and a written summary was produced the same day or the day after the interview was made. After conducting all the interviews the summaries of the interviews have been analysed and used to create a general summary of all the interviews. This summary has been complemented with material from group interviews and from the other project groups.

As described in part 4.5.1 all empirical studies in general have drawbacks as a result from methodological problems. In our case a certain selection of organisation was necessary to do and which people to interview on these. These selections have been done together with ICC and a tutor. However, the number of small and medium sized companies could have been additional. This would have given a stronger empirical base for the thesis conclusion.

Interviews and workshops have been used to identify difficulties and create recommendations for the further work of the CI. A more serious methodological problem in this process has been the fact that the CI is not an existing organisation. Respondents have been forced to use their own experience in trying to identify which factors that can be of importance, and these are not based on an existing relation. Difficulties and aspects that therefore could be of significant importance can have been missed. This problem has been countered for by extensive analysis and discussion within the project group and during the workshops.

Within the conducted empirical studies there is mostly errors conducted during the interviews. The measuring instrument was created by the authors together with the tutor and then tested on a test group to refine the questions. Still, the interview guide is a product of what the author regarded as important. Relevant aspects of the project idea may have been missed because of this. On the positive side, the interview guide was unstructured and the respondents where allowed to answer freely. Measuring errors where minimised during the interviews since both authors where present at 9 of the 10 interviews. Misunderstandings occurring during the interviews were minimised as the project idea was forwarded beforehand to the respondents, and the questions discussed during the interview. Still there is always a factor of the interviewer being subjective during the interview and during the analysis of the material.

5. Empirical data from interviews and workshops

In this chapter the results from the empirical studies will be summarized. As a base for the report a total number of 10 interviews were conducted with different chosen actors and 4 workshops where held. The first part of the chapter focus on results related to the difficulties with organizing the CI's business. Part two is centred on competence and the identification of competence within organisations relevant for the competence system. The end of the chapter is devoted to a short description on results relevant for this thesis extracted from empirical research conducted by other groups in the main project.

5.1. Organisation

One of the biggest difficulties discussed during the interviews was how to be able to work out the basics for the business process and its functional parts. The business process contains several questions that need to be answered. The CI will most likely supply a solution to a regional demand of transferring competence within the western part of Sweden. It is important to realize that the managing organisation has a certain role to fulfil towards the actors it is trying to help. It needs to add a business value to the companies it wants to help.

Compensation for service

If the business organisation contributes with a business value for the actors it is possible for it to demand a compensation for its work. The form for this need to be worked out and could for example be based on a royalty on a successful business collaboration created with the help of the CI. Several of the respondents stressed that the CI should be more of a non-profit organisation since companies using its service otherwise might perceive it as unserious.

Incentives

At the moment there are a large amount of networks and collaborative organisations operational in the western part of Sweden. Many of these networks are focused on just getting organisations and people together without focusing on creating a concrete business value. There is a risk that the CI will become another of these business networks with to little focus on business value. It is therefore important that it focuses on creating a concrete business value through the meetings that are conducted.

Different actors in the region will have different incentives for participating in the CI. The actors need to see an increased value in participating in the competence system and the business process. One effect of the managing organisation is the creation of a bigger contact surface between organisations in the region. Relevant organisation in the region will perceive the CI differently depending on size, industry, organisational purpose etc. The CI could be a way for the participating organisations to market themselves and transferring valuable competence missing in a business deal. For smaller organisations without extensive references it could work as trust facilitating organisation. In general the relations that the CI has with its actors will differ depending on the other organisations contribution to the CI's business. The relations will vary due to: organisational purpose, position in existing network, industry, size etc.

For a company to turn to the CI for assistance in finding competence it needs to be able to do a correct interpretation of the problem in hand. When conducting the development of new complex products it is not always clear which competence is suitable for creating the

products. This is a problem that the developing company also faces. If this company do not fully understand which competence they need they will be reluctant to turn to the CI for assistance. It is according to one respondent to difficult for them to try to formalise the problem, then for the CI to find the right competence and contact the organisation with this competence.

Long-term goals
One central question evoked in the discussion is what will happen with the organisation after it is functional and stable. At the moment it is a regional public initiative that meets a demand that the business sector itself should supply according to one respondent. When should the public sphere let go of the idea and leave it over to the private sector. One alternative might be to redefine the CI's business for example by expanding its business towards organisations supply chain management and hence altering its organisational purpose.

Neutral regional actors
A neutral organisation should own and manage the CI's business. This or these organisations should be regarded as neutral by the actor's with which the CI is planning to collaborate with. The owners should be regarded as representatives for the region and at the same time retain respect from the business and university sectors. This/these organisations together with another party might form a set of suitable owners and the ownership might then be divided.

Internal competences
The competence system is the centre of the CI. To be able to map competences within chosen organisations the CI will most likely need to complement its internal competences with external experts. When selecting organisations for the CS, knowledge on industry specific competences will be needed and expert knowledge on these industries will be difficult to cover within the CI. Thus by involving outside experts the CI manages to secure the quality of the organisations that are mapped in the competence system. This will hopefully enlarge the trust for the CI. Which competences the CI should have internally are difficult to determine. A certain competence on how to for example create a business deal, legal terms for its creation etc. might be suitable. These competences might be most wanted by smaller organisations that turn to the CI for utilising its service.

Besides spreading information about its business the CI needs to identify information on business ideas and how to obtain the deals. Hiring people that have a good knowledge about business processes in general could do this. These people should also have good personal network to different actors in the business sector. The basic business should be complemented with a marketing function for the CI that can spread information on the business idea to the targeted actors. It is a problem to raise an awareness of an organisation like the CI since it has a new approach by improving the business processes for companies. The CI will need its own network for spreading information and getting business deals. It is therefore of interest for the CI to identify which actors in the region that are of significant interest and how they should be approached.

Size
It is important to emphasize that the CI needs to be limited in size. It is the regions companies that create value and the CI should only act as a competence adviser. The CI might be perceived as bureaucratic if it is marketed as a regional CI containing regional

competence. This might be interpreted as an organisation that immediately tries to map and control all relevant competence in the western part of Sweden. This task of directly creating a regional umbrella organisation is too big and complicated. The emphasis should instead be put on a CI that in a process maps competence in selected organisations within selected business areas. It is better to let the business grow from below with identified organisations containing a good business potential. Regional competence is often the result of a long historical background. A region cannot be good at everything and has some specific core competences that have evolved over time.

Access to profiles in competence system
One point of view that was mentioned by the respondents was that the organisational profiles within the competence system should be updated by the organisations themselves. This could be done together with representatives of the CI. Basic information on the organisations represented in the system might be open, for example which companies that is mapped within the competence system. If further information is wanted the CI should be contacted.

Information on business opportunities
Information on business opportunities is often spread among organisations through already existing contacts. Personal relations or previous customers looking for an updated version on an existing product or solving a new problem are the two main ways of spreading information on business deals. One respondent claimed that in projects where state funding is a part of the budget one of the requirements might be that the project team, or part of it, consists of representatives or organisations that have not previously collaborated. In these cases the CI might be of use. Still, the personal relations are most important for spreading information on business deals, especially within the individuals own industry.

The CI will most likely receive information on business deals through companies coming to the organisation and looking for a suitable partner. The CI can then help in the process or suggest forwarding the deal to someone else. Thus the CI can contribute with a heavy network and intermediate in the company's business process.

Information on business deals are often regarded as sensitive information. If a competitor gets hold of information on a deal it is possible that they might give a better offer and thus companies' try to keep information to themselves. In the longer perspective this might be harmful to the company since the competitor can grow stronger due to the deal. Another risk is that the company loosing the deal might loose an important business relation. Expecting companies to come to the CI might then be difficult since the companies might perceive it as risk of loosing the deal and revealing sensitive information.

Responsibility
Responsibility for the business deals that the collaborations are centred on where mentioned by several respondents as an important point. Besides clarity on who should be responsible for the business deal itself it is central to know which principle that guides the division of responsibility. This factor is important for minimizing the risk and the insecurity in the collaborations that are created. It is important to notice that according to one respondent that a totally shared responsibility is not automatically good. It is suitable that one part in the collaboration is more responsible and also focused on driving the process forward and taking the main responsibility towards the customer. Which organisation that should be responsible

and the form for responsibility will most likely depend on the occasion and general rules can then be difficult to work out. In general it is likely that the best result will be achieved if one organisation, preferably the one turning to the CI for help, is responsible for managing the deal.

It is difficult to draw the line how much the CI should be involved in creation of the collaborations. In the interviews several respondents stated that the CI should not be too involved in negotiating the terms for the collaborations i.e. legal terms, pricing strategy etc. The companies themselves are better at doing this and in the cases when they lack competence external competence can be used, for example professional law firms. The creation of collaboration between chosen organisations should in principle result in the CI turning over its responsibility for the process to the collaborators

Collaboration
Several respondents mentioned the fact that collaborations according to their experience and knowledge often failed due to different reasons. Collaboration between small and medium sized companies can often be difficult since they often are run by entrepreneurs that in general are more bound to work by themselves. In order to create and run collaborations it is important to bridge over these differences in corporate culture. To create alliances are often difficult and as an alternative it is possible to start from already existing forms of collaborations. Other facts mentioned are that collaborations in the end are based on people and therefore this has to be taken into consideration. As a result of the CI's process different organisational cultures will meet. Within the university the tempo and time horizon for projects often differ compared to the industry. Also the process for retrieving information on business deals differs.

Rules for the business process
On top of the collaboration difficulties the respondents mentioned the important aspect of clear principles for the way the CI will work and deal with information. This regards mainly principles for mapping and selecting organisations for collaborations, how information on business deals is to be treated, and the involvement in created collaborations with a sharing of responsibility. The solution to this should not be an ad hoc solution but guidelines finished before the CI's starts its main activities. Confidentiality must be guaranteed for the organisations involved in the business.

All these factors are essential for creating a basic trust for the CI. This is something that is present in other network organisations and the respondents from these organisations stressed the fact, that creating these rules and acceptance for the CI can be a long process.

Selection
The CI and the part that makes the selection of the parties in the collaboration have a large influence on the process. It is therefore important to clarify this process and make it as objective as possible. Only companies with the right competence and a high business potential should be selected. Other criterions could be a judgment on the possibility whether it is financially solvent, have the right resources for managing the deal or previous business reputation.

To create acceptance for the selection process is central for success in the long run. The organisation within the competence system should be selected after specific criterions to further enhance the quality of the organisations in the competence system. This should increase the trust for the CI.

In the selection process it is not always easy to find the right organisation with the right competence. There is a risk that the organisation owning the problem might not have a full understanding of it. A consequence of this could be that the wrong competence is selected or that the work and resources required are misjudged. To counter this difficulty the CI might have connections with experts in different fields that can help in the process of specifying the needed competence.

Competition
When choosing organisations for the collaboration there is a risk that competitors are selected to participate in the same collaboration. The risk of difficulties in the collaboration process might then increase. The CI and solution presented must take this problem into consideration. Most likely the managing organisation has wide varieties of organisations in its competence system and difficulties might then be avoided. It is possible to make the selection from a large numbers of organisations. Still it is important to create an atmosphere that is free from competition for securing the best result for the customer and the organisations working together. When negotiations on collaboration have started between two competitors there is a risk for an opportunistic behaviour. One of the parties might take the deal and go behind the competitors back and finish the deal alone.

By allowing participation in the selection process from the organisations that comes with the business deal to the CI, the prestige and power of the CI might decrease. The problem of acceptance could also vary between different organisations for example universities that in general have lower competition between different research groups.

Trust
MNC often have a large number of existing collaborations and to be a collaborative partner to them often results in meeting high expectations on quality, price and reputation. Existing relationships and risk associated with changing a supplier/collaborator seems to have a greater importance, according to the respondents, compared to the factors listed below. The CI needs to create trust for its business towards these companies in order for the MNC: s to trust the CI with deals. In collaboration it is in general important to meet the following criterions:

- To present a complete solution to the presented problem.
- Deliver in time
- Be professional
- Ability to have a good dialogue with the customer
- Someone that co-ordinates the deal
- Division of responsibility: Who takes which responsibility?

The CI is dependent on a good reputation in order for organisations, mostly companies, to turn to it for help. This is a difficulty since trust is often built during a long time period and previous references of good business. Since the CI does not have this experience it is

necessary for it to construct pilot cases where the business process can be developed. It is imperative that these pilot cases will become successful since the CI is in an early stage. Suitable organisations for the pilot case could be local organisations that are well known, established and respected. Presenting the commercial value with the CI creates trust.

5.2. Identification of competence

Systems for regional or industry specific competence mapping exists in certain regions in Germany. Experience from these competence mappings show that competences within organisation can be mapped from different types of information objects for example applications, organisations, persons, news and events. The organisations or people in these systems where chosen from the criteria of being able to contribute with a commercial value. Important in these mappings have been the need to create standardized procedures and minimum requirements for the competences that where to be stored in the system. A large amount of work was also put into standardizing the concepts used in the system and creating consensus among the actors in each region.

Before the CS is created it is important to have a notion on the need for a competence system, how it should be designed and used. The competence system is just a means to reach a business goal. Which competences to be identified and how they should be used in the competence system is also essential. Competence systems are often complex and difficult to manage efficiently. In the end collaboration and competence is displayed on an individual level. Competence of a member of staff is often sensitive to display to an outside actor, mostly within companies since it is a risk for competitors trying to recruit personnel with special competence. To map competence is therefore, in specific cases, difficult for an organisation outside the company.

Mapping across existing industries

The mapping of competence within the managing organisation should not be restricted to specific industries. To select competence across industries gives the CI the chance of getting the most important competence from the western part of Sweden. New innovative solutions and business opportunities are often reached by combining competence over industries. If the search for competence is restricted to specific industries it is a risk that valuable competences are missed.

Levels of competence within organisations

The organisation can participate in the formulation of the competence profiles and increase the possibility of getting the right competence. When an organisation has been identified as containing valuable competences the difficulty of mapping this competence still exists. Larger organisations often contain several important competences that can be spread over different groups or levels, for example the different research groups in the field of material science on Chalmers. These groups are often dynamic and competence often changes over time making a mapping of competence difficult. In these cases it might be possible to go through a mediator in the organisation in order to find the suitable competences.

Competence and networks

In more formal networks the central network organisation can supply information on its member's competence. It is a risk that these organisations might favour certain members or

are in other ways subjective in the selection of the organisations for the CI's competence system. It is difficult for the CI to still be neutral. Within these networks the information on competence might also be old since it often is a slight resistance to the transferring of information. In these questions the CI might have to by-pass the network organisation for conducting its business efficiency. In certain cases the CI could be interpreted as a threat towards existing network organisations since they might become redundant.

Notion of competence
Organisation often interprets the term competence differently and will therefore contribute with different results to the work on mapping competences. Competences are often identified as specific products, equipment and the competence that individuals possess. Complex products have a more complex competence base and it is difficult to map which competences are the base for the product.

The described competences in an organisation can change considerably over short time periods and it is therefore important to map competences on a more stable level. A higher level of competence is supported by the fact that the tasks that the companies are faced with varies over time and a too specific competence profile can then miss potential organisations. To facilitate the transferring of the correct competences to the CI's competence system, a dialogue could be held with the selected organisations.

Empirical result from other project groups
Competence can be mapped in the form of different areas as for example resources, previous projects, network, and ability to run projects and follow the development on the market that the organization operates on. (Vadsbo, 2003-09-22)

In the university sector it is often a different way of working. The equipment and processes used in research are not always possible to transfer directly into the industry. It is a different way of thinking when it comes to constructing and developing products. (Imego, 2003-09-19)

It is a difficulty in defining competence and standardizing the definition of competence. A competence that de facto is the same in one sector might be defined differently in another sector. This quickly becomes a problem when competences are to be mapped across industries. (Volvo IT, 2003-11-06)

Competence is something that evolves over time and it is dynamic. Therefore it might be suitable to map the competence that is needed and let the competence system grow dynamically. This minimizes the risk of the competence turning invalid or not being used. (Volvo IT, 2003-11-06)

Competence can be mapped on different levels for example group or individual level. It is important to find a level that is acceptable for the specific case and not too detailed. A detailed level often becomes difficult to overview, use and costly to manage. Often an individual level is suitable since competence often is identified in individuals. (Volvo IT, 2003-11-06)

5.3 Result from empirical studies

The following critical themes have been identified from the interviews and workshops that where conducted and from the empirical result that other projects groups have reached. According to the respondents the CI has to fulfil the criteria listed below. The list has been narrowed down to following, according to our point of view, most important themes:

1. Closed or open competence system.
2. Relationship and critical areas within them.
3. The collaborations.
4. The mapping of competence.

1. Closed or open competence system

If the competence system is closed for external stakeholders there is most likely a difficulty in finding the right competence for the organisations that is turning to the CI for help. The owner of the problem does not always know clearly which competence it needs. It is therefore difficult to communicate the need to the CI and for it to find the right competence. This problem could be avoided if the searching in the system is open to external actors. This creates a barrier for the organisations that potentially should use the CI's services.

2. Relationships and critical areas within them

The *business process* of the CI needs to be clear and formulated. Guidelines, rules and criterions for mapping, selecting and starting collaboration forms for the organisations within the business need to be formulated. For example: organisations coming with business suggestions to the CI should be guaranteed participation in the selection of counterparts for the collaboration and the forms for it. The business process should be regarded as objective in for example selection of organisations.

- A set of *internal organisational capabilities* are necessary for the CI. This could for example be knowledge on competences, specific for certain industries and knowledge on business processes in general. Its internal organisation should be flat i.e. consisting of a small number of employees.

- The value that the CI can contribute with to the regions organisations need to be communicated. Different actors have different *incentives* and should be approached differently. The value of the CI can be proved by constructing successful pilot projects with well-know regional companies.

- The CI needs its *own network* in order to create awareness of its existence, gain acceptance among actors and in order to receive information on business opportunities.

- The CI needs to have a *neutral owner and manager* that are regarded as neutral in the region.

- The CI needs to create *trust for its business idea.* A trust for the CI's business process needs to be established for the organisation that will use the services provided. Example: In the CI's competence system organisations will be stored. By guaranteeing

that these organisations are serious and quality marked the CI can facilitate the creation of trust for its business.

3. The collaborations

In the *collaborations* that are created a number of difficulties can arise. It is in the CI's interest that the collaborations become successful. This needs to be taken in consideration when organisations are selected and the collaboration is formulated. However, the CI's involvement in created collaborations should be limited.

4. The mapping of competence

The *mapping of competences* could start within one competence area/industry and then expand to other competence areas. The competence need to be mapped on a specified level related to the demands of the CI's business. The whole *process of identifying competences* needs to have basic guidelines and standardisation of what to look for in the analysed companies. The mapping itself need to be designed in a cost and time efficient way.

- When mapping competences it is difficult to get a correct picture of the organisations competences. There is a high risk that the organisation wants to *exaggerate its competences for marketing reasons* or that competence is not depicted correctly. The last result is due to difficulties with identification of competences.

- Individual competence within commercial organisations as for example companies are often regarded as *sensitive information*. It is therefore suitable to map this competence on a level accepted by the organisations. The process for doing this has to be accepted by the organisations involved.

- Competence is regarded as a *complex concept* that is difficult to identify and define within an organisation. When mapping large amounts of organisation its imperative to identify competences that are not too dynamic. The competence looked for could be identified from: applications, organisations, persons, news, and events. Competence is often associated with key individuals in an organisation.

6. Discussion

In this chapter the empirical results is compared to and discussed with selected theories. The selected areas of theories are based in the concept of stakeholders, network and competence. Within the two research areas, relationships and critical areas within them, and competence will be discussed. The different points in the discussion refer to the problems identified in the previous chapter. In relation to these problems recommendations to how these problems could be approached is discussed.

The recommendations are listed in four general areas considered as important in this case:

- Opened or closed competence system for people and organisations outside the CI.
- Relationships created as a result of the CI and critical areas within them as for example incentives, ownership and management, and internal organisational capabilities.
- Success of created collaborations and the importance of this for the CI.
- Identification of competence areas and the complexity of competence.

According to Mintzberg (1987a) an organisation can use the principle of *positioning* in finding an appropriate strategy towards organisations in its external environment. By finding out what these external stakeholders think of the organisation itself it is possible to formulate a response to these opinions. Important themes in these relations becomes a starting point for the strategy formulation and thus also for the CI. The result of the CI's business is collaborations that can be described as producer networks. These producer networks are according to Svensson et al. (2001) a form of co-production arrangements. The CI itself can be described as a potential and virtual network for technical co-operation facilitating the development of products.

6. 1. Closed or opened competence system

One of the most central problems is to determine whether the CS should be an opened or closed system. The discussion regarding this point is based on two perspectives; the Users (interviewed organizations) and project initiators (VGR and CCI). The difference between an opened and closed system is whether the user does the search for complementary competence by itself or if the CI does it. The decision whether the competence system should be closed or opened is an issue that affect parts of the business process and organisation of the CI. We find it therefore important to discuss possible consequences of the different alternatives.

Opened system

In an opened CS the user/owner of the problem will themselves conduct the search for the complementary competence. The CI will in this case only work as responsible for mapping the competence and for managing the CS.

Advantages:

- Avoiding the risk of misinterpretation when determining which competence that needs to be found in the CS, since the organisations conducts the search by themselves.

- Visibility: Marketing for the organisations that are stored in the CS. If the competence system is opened the mapped organisations will be visualised which contributes to marketing of the organisations.
- Smaller internal organisation for the CI. The need of an internal organisation is not as high as when the system is closed since the organisations do the search themselves.

Disadvantages:

- Difficulties in raising revenue for the CI, at least in a short time-period. The organisations using the CS will themselves contact the partner intended for the collaboration. The CI will then have difficulties motivating any royalty on the collaboration or fee for the services provided.
- Difficulties in designing a system that guarantees a successful search without assistance. The people working with the CS will in time built up a competence on how to search for a suitable complementary competence. Competence is a complex notion and it is difficult to define and locate (Sanchez 2002).
- No control over the use of the CS: can for example be used by a company to monitor competitors. This is then destructive ways of using the CS and will most likely undermine the trust for the CI's business.
- The competence profiles are visible for all types of organisations: Lead to the consequence that companies can be restrictive with transferring competence to the CS since it is visible for competitors.

Closed system

In a closed system the user has to turn to the CI for help in finding a complementary competence. The CI can help the approaching organisation in conducting searches in the CS.

Advantages:

- Possible to generate revenues: A percentage or fee could be extracted from collaboration's that turn out to be successful as a result of the CI's service.
- Confidentiality on which organisational specific competence that is stored in the CS. The trust for transferring information on competence to the CI can be stimulated through different legal treaties.
- Organisations, especially companies, will be more positive in transferring competence to the CI.
- Increased possibilities for organisations getting help from the CI when it comes to identifying competence: more control over the process, which can be positive for organisations using the service, provided.

Disadvantages:

- Threshold for approaching the CI: Organisations could be hesitating in turning to the CI for finding complementary competence since it is difficult to explain complex problems.
- Difficulties in establishing a problem free communication when interpreting competence specific problems and then finding the appropriate complementary competence: varies depending on the size of the organisation approaching the CI and on the complexity of the problem in hand.
- Larger organisation for the CI and hence higher costs.

- The general business idea with a regional competence intermediary is a new way for complementing organisations competences. An alternative way, especially for companies, to find complementary competences, which can take some time for them to accept.

Information and thus competence can from network theory be derived as sensitive. (Svensson et al., 2001) Thus, displaying competence in a way that competitors can view the information without the company's knowledge or approval, can lead to the consequence that the organisation loses control over the information flow. This is a clear negative aspect for a company that wants to transfer competence to another organisation. In all forms of network collaborations, thus also in this virtual case, there is a need to control the flow of information. A structure for handling of example information can improve the trust for an organisation (Svensson et al., 2001). This is closely related to the CI's business.

The focus in the report has been on the creation of an organisation that supports a closed CS. If choosing a closed CS the disadvantages listed above need to be overcome. Our recommendations are that the most central parts of the CS, as for example the *competence profiles and detailed search functions, are closed*. Other functions or information in the CS could be open for outside organisations without damaging the CI's business. When developing the CI and its business the following general guidelines could be followed:

- The organisations owning the problem are encouraged to participate in identifying the complementary competence with support of the CI's external and internal resources. This lessens the risk for a misinterpretation of the problem and increases the possibility of organisations using of the services.
- Marketing of the CI: Directed in the first phase to organisations and networks that are positive to the idea and in general used to collaborations of different forms. Construct a pilot-project to use as concrete example on how value can be generated for the organisations in the CS. Marketing primarily directed towards: small and medium sized companies, institutes and institutions within the western part of Sweden.
- The CI can also be used as spreading information about the competence that the region possesses towards other international clusters that have a similar competence profile. This could be directed towards for example interesting companies within these regions or universities that might have an interest in using competence from the western part of Sweden.
- The companies turning to the CI for identification of complementary competence could be guaranteed ownership of the problem through the process. It is also suitable to give the company experiencing the problem influence over selection of the counterpart that possesses the complementary competence.

6.2. Relationships and critical areas within them

Organisations motivation and will to collaborate depends on the clear structure of the network process involving for example written guidelines. A clear structure makes the business process more time efficient which is confirmed by Svensson et al. (2001) who argues that time is an important and valuable resource when participating in a network. Therefore the consumption of time seems to be an important factor for the participants. According to Lind (2001) collaborations need a clear structure. The structure of the CI's network is determined by its relations (links) to other organisations (nodes). The CI's relations to its

stakeholders have a tendency to differ depending on what function they have towards the CI (Polonsky, 1995). Links have certain functions and the functions have consequences on behaviour, attitude and the way actors comprehend things within the collaboration. This affects the network as a whole.

The function of the business process is depending on different relations with external actors, stakeholders (Polonsky, 1995; post et al., 2002). In this phase of developing the CI the functions of the relations are focused on mapping competences and create an organisation that will be used by the stakeholders. These relations have different functions that determine how the links will look like. The CI is today linked to for example small and medium sized companies, institutions, institutes, and networks.

- **Communication of value and incentives for participation:** According to Sharma 1998 there are two different schools that explain the participation of an actor in an alliance or collaboration. Those are to minimize the transaction costs and to achieve common strategic goals. Svensson et al. (2001) argues that network is a collaboration based on free will and the participants need to see some kind of positive development and return. The first option by the CI is the offering of information on competences and thus offering an opportunity to lower an organisation's transaction costs. Part of the purpose with collaboration is to complement each other's resources, which lead to lower transaction costs. Secondly, the CI contributes with business opportunities, which lead to a collaboration around a goal that is a priority for the company itself. The value that the CI can contribute to its stakeholders needs to be communicated. They have different incentives and therefore should be approached differently. The value of the CI can be visualised by constructing successful pilot projects with known regional companies. Showing a history of successful collaborations, i.e. reputation, is according to Sharma (1998) an important incentives for organisations to enter a network. This can for the CI be achieved by using for example pilot cases.

  A network can according to Lind (2001) contribute with different positive effects for an organisation as for example information or resources. The CI has the possibility of contributing with a complement of companies competences when they are trying to win existing business opportunities. The potential virtual network that the CI creates gives primarily companies an opportunity to find complementary competence outside the, often limited, personal network. It is also interesting that the collaborations gives, the participating organisations a competitive advantage which is supported by Lind (2001). A second incentive could be that organisations choose to participate to minimize the risk of loosing competitiveness towards an existing competitor. This is based on that a competitor has chosen to transfer competence to the CS and the other company then makes the same move.

  When a company today has a need for complementary competences or information on business opportunities they mostly use their *social network* to find it (Lind, 2001; Svensson et al. 2001; Sharma, 1998). This method is limited since the social network might not be able to supply them with the right competence. If companies find a complementary competence the difficulty is knowing if they have found the most qualified one. With the competence system of the CI companies will have the

possibility to find a better match. The main incentive for companies to be a part of the CI is its possibility to generate business. This can be done in two ways:

- A company is invited by the CI to enter collaboration together with other invited organisations, which generates a new business possibility.
- A company that has a business possibility can complement its competence by entering collaboration with other companies through the help of the CI.

- **CI's network:** In order to decide categorisation of a network one has to specify what kind of relations and organisations that are linked together. The structure of the network affects the way a network and companies within it is functioning. (Lind, 2001) Links that the CI has to its actors reminds of actor-bands where the incentives for collaboration are the need for competences and business opportunities (Håkansson & Snehota 1995, from Lind 2001).

  The CI has a need for creating its *own network* with clear relations to certain actors for example important company networks in the western part of Sweden. This is partly since a network can be used for spreading information (Zeffane, 1995). In our case a network is a prerequisite for conducting business. This is in order to create awareness of its business, create acceptance of its business and retrieve information on business opportunities. Since this in general takes time and resources it could be suitable to use already existing relations in the potential owner's network, for example the networks that CCI has. These organisations can contribute with for example knowledge on business, legal aspects etc.

- **Ownership and management of the CI:** Three aspects when deciding who is going to own and manage the CI is *equal relations, trust and external support*. (Svensson et al., 2001) When selecting partners it is important to choose partners on an equal level since a superior partner otherwise might ruin the collaboration. A partner that is not accepted by all parties will minimise the incentives to participate in the collaborations and reduce the level of trust. Even if this aspect is most relevant for the organisations intended for the collaborations, it is also relevant for organisation that the CI need to collaborate with for managing its business. This is supported by stakeholder theory that emphasised the need of identifying what is important for the organisations different stakeholders. (Svensson et al., 2001; Post et al., 2002) The CI must be regarded as fair and trustworthy by the organisations that are planning to use it since they otherwise might hesitate in using its services. If the owners and the managers of the CI are not perceived as neutral the services of it might not be used. The CI needs to have a neutral owner and manager that are seen as neutral in the region.

  One of the four parts of the foundation of a network is according to Svensson et al. (2001) trust. The network is built on trust and is depending on it. According to Jarillo (1993) trust is developed over a longer time period. Sharma (1998) uses the concept of commitment and promise when explaining trust. Trust is based on business relations and deals that often are a result of previous experience. Therefore it might be difficult for the CI to build trust since it does not have any existing business relations. *Trust for the CI and its business can be facilitated through:*

  - Securing the quality of the organisations represented in the CS. Organisations mapped for the CS must be guaranteed by the CI as capable of contributing

with the competence and resources that the claim that they can. The need for a collaborator that is verified as capable is supported by Lind (2001).

- Creation of pilot project: The project can also be used for further developing and designing guidelines and rules for the CI's business.
- Neutral owners that are represented on a regional level, for example VGR and CCI. These organisations existing networks can be used for creating acceptance for the CI's business and marketing. By using organisations with already existing and extensive network the process of building trust and finding it is facilitated.
- Non-profit focus: when promoting the CI and its business it is possible to put the stress on that its services are created for improving the economical development of the western part of Sweden. Therefore the cost for the provided services should be minimized and close to the running cost of the organisation.
- Clearly formulated written guidelines for which competence areas that are to be present in the CS, how this competence should be used, how the selection of organisations from the CS is done and finally the level of involvement of the CI in the collaborations. As Svensson et al. (2001) claims, the feeling of control over the counterpart and the processes in a network is contributing to the creation of trust.

The *internal organisational capabilities* that are most necessary are people with knowledge on how to manage the CS, draw up the guidelines and process for mapping regional competence. Additional and important competence is general knowledge about communication with the business sector and their specific needs for conducting business. It is important that the CI becomes small and efficient organisation and the internal competence should be minimized to a handful of people. If additional competence is needed external advisor might be used.

6.3. The importance of successful collaborations

Success of a strategic alliance is determined by mainly relational and ethical factors (Sharma, 1998). The selection of partners is achieved by determining if the organisations are willing to pool their resources, and also their ability to collaborate. It is also important that the organisations are willing to invest resources. Further discussions regarding the selection of partners are made by Lind (2001), he says that it is important to choose social equal relations since it increases the possibility of a successful collaboration. Selecting equal partners might be difficult, but one way is to select people who have roles at the same level within the organisations that are collaborating. In the same way organisations are selected from previous successful projects or collaborations. Different forms of leadership can be chosen in collaboration. The leadership can be external, a consultant, but it can also be rotating among the partners, but it is important that one party takes an overall responsibility. It is important that the decision depends on the situation and is accepted by the partners. Successful collaborations will result in good references and marketing for the CI and therefore it has interest, in how the collaborations evolve, especially in the initial phase of the collaborations.

When a business opportunity is presented and the collaboration of complementary companies begins, there are several bands that link the actors together. Competences, legal

structure, structure of business process are examples of links between the actors. Important actor-bands among companies within the industry seem to be social relations. (Håkansson & Snehota 1995, from Lind 2001) In certain cases, the social bonds can lead to the consequence that a partner for business collaboration are chosen not on the grounds on the competence provided and best practice, but on the previous social relations. Since the *outcome of the collaborations* are dependent on the organisations ability to collaborate and their previous achievements, it is suitable to check if the organisations that are to be mapped in the CS can manage to participate in a collaboration. One factor in this is for example, the company's reputations as described by Sharma (1998).

The stakeholders of an organisation can have relations between themselves that effects the central organisation (Polonsky, 1995). This is mostly relevant for the CI in the case when companies or networks that are competitors become actively involved in the business process. These conflicting interests can influence the CI in for example how it displays which organisations that are involved in a specific collaboration, or how the selection process of organisations is constructed. An aspect related to this are if organisations chosen for collaborations are connected to different and competing networks. This might cause collaboration problems that the CI needs to deal with. The participants are influencing each other in a complicated way, leading to the consequence that the outcome of the collaboration cannot be fully determined (Sharma, 1998).

In collaboration informal or formal agreements can have a negative influence on the rest of the network (Stjernberg & Hellberg, 1995). This can be connected to the risk of companies using the CI for retrieving information on potential collaborators and business opportunities. This can then result in an opportunistic behaviour where the company leaves the collaboration in order to finish the deal themselves.

It is in the CI's interest that the created collaborations become successful. Successful collaborations contribute to an increased trust and positive marketing for the CI's business. This can partly be achieved by screening the organisations coming to the CI for using its services and partly by monitoring the creation of the collaborations. The last point is focused on securing the division of responsibility within collaborations. A clear and formulated framework of the process might also achieve assuring successful collaborations. Commitment from organisations in collaborations as Sharma (1998) puts it can then be facilitated by a framework and screening.

6.4. Mapping of competence

Regional competences are often dependent on clusters developed over a long time period. An analysis of these clusters gives a starting point for which competences can be mapped within a region. (Porter, 1998) According to research done by Linton and Walsh (2001) core competence has been proven to be difficult to identify and manage. Core competences are resident within individual organisations and together with competence it can be used to identify relevant organisational competences (Hamel & Prahalad 1990, 1994; Nonaka 1994). When the CI maps competences it could be suitable to start with a minor part of the regions competence i.e. a selection of the regions core competences. This regional specific competence can then be selected from competence areas within the western part of Sweden that are perceived as comparatively better. Instead of viewing this competence as structured

in the classical industry structure it is possible to look upon it as regional competence areas that stretch across existing industries. This is supported by Porter (1998), who claims that successful clusters often contain competence that stretches across existing industries.

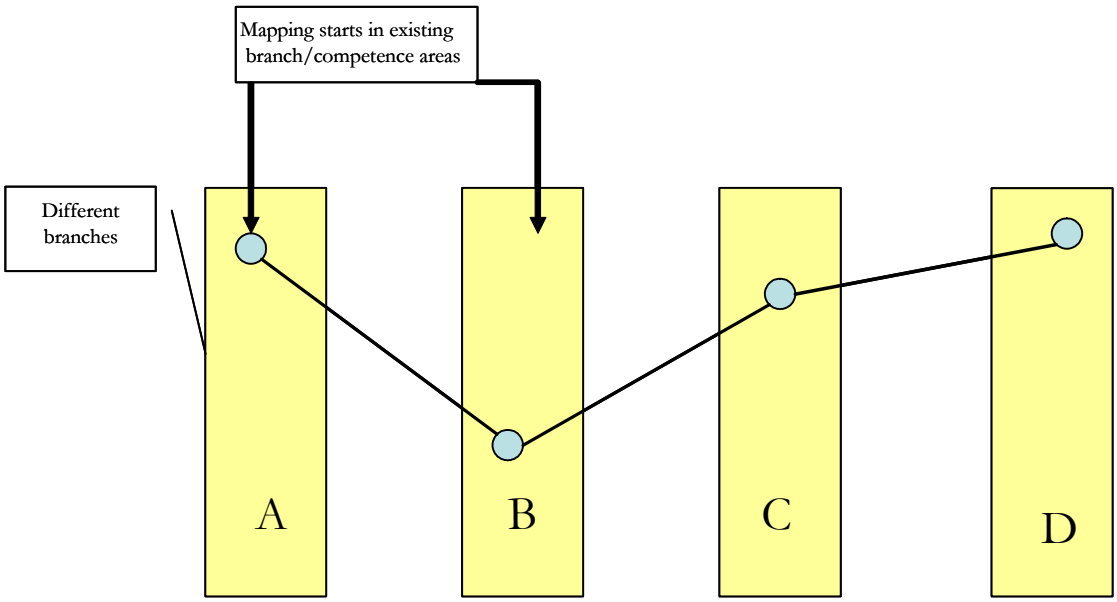
In order to make a cost and time efficient mapping and identification of the competences within a region Linton and Walsh (2001) suggest a process consisting of two steps. First they suggest an examination of industry forecast, technical roadmaps, and trade publications. This will identify many of the technical competences associated with the industry. Secondly they suggest an examination of a few leading firms representing this competence. This process should be complemented with meetings with industry experts who can verify or change some of the mapped core competences. The process of mapping competences tends to become time and resource consuming. This seems to be a common problem, which is confirmed by the research made by Linton and Walsh (2001). To make the mapping qualified and cost efficient the whole process of identifying competences needs to have basic guidelines and standardisation of what to look for in the analysed companies. The mapping can be simplified by using existing industry or cluster specific information/reports that describe which areas that are perceived as prominent. Aakers (1989) principles for identifying SCA:s can be used to complement the process of identifying the relevant value-creating competences in an organisation, for example through benchmarking.

The western part of Sweden contains a large amount of organisations with varying competence. On top of this the commercial value of the competence varies. It is therefore of interest to limit the mapping of competence to selected organisations and competence areas. A working group responsible for the mapping process can manage the regional competence mapping. This can be done in five stages and is depicted in figure 7:

1. Which industries in the region are interesting from a commercial aspect? This should be complemented with a comparison on which industries in the western part of Sweden that are perceived as competitive in relation to other regions.
2. Which are the competitive competence areas within these industries?
3. Identify relevant organisations within these competence areas?
4. Which competence within these organisations is perceived as unique and possible to commercialise?
5. Analyse in which *other* industries that these competence areas could exist. Identify relevant organisations that are linked to the relevant competence areas within these industries.

The working group could consist of a handful of people that drives the process forward. This group could be complemented with external advisors, for example industry organisations institutes, institutions, network representatives and companies. The external advisors can complement CI's internal knowledge on the competence areas that exists in the western part of Sweden. These external advisors will most likely fill an important function since it is difficult for CI to possess all the necessary competence itself.

Figure 7: Description on regional competence identification



Competence and its complexity

Competence is according to Nonaka (1994) and Sanchez (2002) regarded as a complex and dynamic concept often claimed to be changing rapidly. This leads to the conclusions that Hansen et al. (1999) claims regarding the difficulties with mapping competence from individuals and organisations in competence systems. According to Kempler and Idinopolus (2003) it is imperative to find out the purpose of the competence system in relation to the business and which information to fill it with. The CI will have to map competences within a large amount of organisations that often change when it comes to the competence they inhabit. These organisations are not always aware of the competences they have themselves and it is therefore difficult to create the right profiles to be stored in the competence system. If competence is a dynamic concept it might be suitable to map it in a level that does not change too rapidly, for example as an asset or skill. Also this could be a synthesis of the fact that competences often are associated with specific key people within an organisation. When discussing incentives for an organisation to participate in a competence system it is relevant to judge whether the organisation will give a correct picture of its own competence. There might be a risk that certain organisations will exaggerate its competences for increasing the possibility of being chosen in for a business deal. Related to this is the fact that there might be a resistance among individuals within an organisation to reveal which competence they have and participate in a mapping of unique organisational competences (Stenmark, 2001).

Identification of competence within organisations

Competence within an organisation is often perceived as complex, dynamic and difficult to map. Competence can be related to work tasks that are used within an organisation for example producing a product (McClelland, 1973; Sandberg, 2000; Choo 2000). Presented below is a suggestion on how competence could be viewed by the CI.

- Similar competences are often described differently between organisations. This possesses a problem and need for standardizing mapping of information on competence within the different competence areas.

- Competence on an individual level within a company is often sensitive information. It is also perceived as changeable and dynamic. Mapping of this type of competence should therefore be avoided. Still it is central that all profiles have a contact person that help in identifying a relevant individual when a complementary competence is asked for.

- In the initial stage the CI should itself construct as much as possible of the competence profiles. These profiles could after this be confirmed, modified or developed by the organisations themselves.

The profiles could be constructed from organisations explicit and object-based competence:

- Having a unique business area in relation to its industry/competence area,
- Unique applications,
- Unique competence connected to these applications: physical equipment and department specific,
- Quality insurance of the organizations from specific criterions: Financial, organisational reputation, legal confidentiality agreement etc.
- The competence mapped should be from the perspective that it is commercially attractive on the market.

7. Conclusion

In the conclusion a recapitulation will be done to the purpose of the thesis. This is followed by a summary of the conclusions that can be drawn from the empirical and theoretical studies in the earlier part of the thesis.

The main purpose of the thesis has been to formulate a strategy for the CI's business based on the identified problems. This purpose resulted in two additional purposes. 1.) To identify and describe areas of problem within the CI's external relations. 2.) To identify and describe areas of problem when identifying competence. From these purposes, the theoretical discussion, the empirical research and from the discussion in chapter 6, the problems below where identified as the most important. The conclusion can be summarised as:

- The competence profiles and the most central search functions should be closed to people outside the CI.
- Within the relations to existing stakeholders the incentives for participating with the CI need to be communicated. Related to this is the importance of a neutral owner and manager that can contribute with an extensive network.
- Within the CI's relations the need for trust is essential and can be established by creating a pilot case that can be used as a reference.
- A mapping of regional competence can start from identified competence areas within the region and organisation that are connected with these areas. Important then is to realise the complexity of competence and it sensitivity within organisations. As a result of the mapped competence profiles can be constructed from for example unique applications and competence related to this.

7.1. Closed or opened competence system

The focus in the report has been an organisation that supports a closed CS. Our recommendations are that the most central parts of the CS, as for example the *competence profiles and detailed search functions, are closed*. Other functions or information in the CS could be open for outside organisations without damaging the CI's business. Displaying sensitive competence in a way that competitors can view the information without the company's knowledge or approval, can lead to the consequence that the organisation loses control over the information flow. This is a clear negative advantage for a company that wants to transfer competence to the CI. When developing the CI and its business the following general guidelines could be followed:

- The organisations owning the problem are encouraged to participate in identifying the complementary competence with support of the CI's external and internal resources.
- Marketing of the CI: Directed in the first phase to organisations and networks that are positive to the idea and in general used to collaborations of different forms. Construct a pilot-project to use as concrete example on how value can be generated for the organisations in the CS. Marketing primarily directed towards: small and medium sized companies, institutes and institutions within the western part of Sweden.
- The companies turning to the CI for identification of complementary competence could be guaranteed ownership of the problem through the process. Suitable is also to give the company owning the problem influence over selection of the counterpart that possesses the complementary competence.

7.2. Relationships and critical areas within them

The *business process* of the CI needs to be clear and formulated. Related to this overall problem is a few themes that where central in the discussion.

1. *Incentives* for organisations to use the services of the CI and for collaborating in the mapping process need to be communicated. Organisations will only use the services if they perceive that the CI will contribute with a value to their businesses'. The CI offers an opportunity to lower an organisation's transaction costs. Part of the purpose with collaboration is to complement each other's resources, which lead to lower transaction costs. Secondly, the CI contributes with business opportunities, which lead to a collaboration around a goal that is a priority for the company itself. This can be visualised by creating a pilot project that is based on the CI's business and thus displays how it can create extra value for companies.

2. A regional competence intermediary of this character that stretches over different competence areas and across different industries should be perceived as neutral. A *neutral owner and manager* will most likely increase the probability for the intended organisations use of the CI.

3. Finding information on business opportunities and marketing of the organisation is a difficult task. The process of getting the organisations in the western part of Sweden to use the CI's services is difficult since it does not have an existing network. The CI needs its *own network* in order to create awareness of its existence, gain acceptance among actors and in order to receive information on business opportunities. Since this in general takes time and resources it could be suitable to use already existing relations in the potential owner's network, for example the networks that CCI has. These organisations can contribute with for example knowledge on business, legal aspects etc and are in general accepted among the potential stakeholders.

4. In order to support the managing organisations business and manage it, a set of *internal organisational capabilities* are necessary: knowledge on how to manage the CS, creation of guidelines and process for mapping regional competence, competence about communication with the business sector and their specific needs for conducting business. External advisors can supply additional competence.

5. The CI needs to create *trust for its business idea* for organisations to perceive the business as serious, accept the mapping and turn to it for using its services. Trust is based on business relations and deals that often are a result of previous experience. Therefore it might be difficult for the CI to build trust since it does not have any existing business relations. *Trust for the CI and its business can be facilitated through:*
    - Securing the quality of the organisations represented in the CS: resources, financial capability, reputation etc.
    - Creation of pilot project: The project can also be used for further developing and designing guidelines and rules for the CI's business.
    - Neutral owners that are represented on a regional level, for example VGR and CCI.

- Non-profit focus: when promoting the CI and its business it is possible to put the stress on that its services are created for improving the economical development of the western part of Sweden.
- Clearly formulated guidelines for which competence areas that are to be present in the CS, how this competence should be used, how the selection of organisations from it is done and finally the level of involvement of the CI in the collaborations.

7.3. The importance of successful collaborations

In the *collaborations* that are created a number of difficulties can arise that might lead to a failure for the collaborations purpose. Successful collaborations will result in good references and marketing for the CI and therefore it has interest in how the collaborations evolve. Previous achievements, reputation and commitment can be used to determine the quality of the potential collaborators. A clear division of responsibility and responsible actor for the collaboration is important.

7.4. Mapping and notion of competence

Mapping of competence on a regional level is a complicated process. Instead of viewing competence as structured in the classical industry structure it is possible to look upon it as regional competence areas that stretch across existing industries. It is then possible to identify the competence areas that the western part of Sweden that are comparatively advanced and successful. A working group responsible for the mapping process can manage the regional competence mapping. This can be done in five stages:

1. Which industries in the region are interesting from a commercial aspect? This should be complemented with a comparison on which industries in the western part of Sweden that is perceived as competitive in relation to other regions.
2. Which are the competitive competence areas within these industries?
3. Identify relevant organisations within these competence areas?
4. Which competence within these organisations is perceived as unique and possible to commercialise?
5. Analyse in which *other* industries that these competence areas could exist. Identify relevant organisations that are linked to the relevant competence areas within these industries.

Competence is regarded as a *complex dynamic concept and on an individual level often sensitive* that lead to difficulties in identifying it. The following view on how of competence can be perceived and identified is recommended:

- Similar competences are often described differently between organisations. This possesses a problem and need for standardizing mapping of competence within the different competence areas.
- Competence on an individual level within a company is often sensitive information and dynamic. Mapping of this type of competence should therefore be avoided. Still it is central that all profiles have a contact person that help in identifying a relevant individual when a complementary competence is asked for.

- In the initial stage the CI should itself construct as much as possible of the competence profiles. These profiles could after this be confirmed, modified or developed by the organisations themselves.

The profiles could be constructed from organisations:

- Having a unique business area in relation to its industry/competence area,
- Unique applications,
- Unique competence connected to these applications: physical equipment, department specific and in certain cases to individuals,
- Quality insurance of the organizations from specific criterions: Financial, organisational reputation, legal confidentiality agreement etc.,
- The competence mapped should be from the perspective that it is commercially attractive on the market.

8. Recommendations for further research

This thesis has been limited to a few themes that have been judged as important for the development of the general business idea. Still, during our investigations and discussions several important topics have surfaced. It has not been important to cover them all in this thesis but the most central are presented below as topics for further research. These topics are suggested as themes for a further research during 2004 since they should have an influence on the CI's business:

- Development of a long-term strategy for the CI related to how different actors might react in the future.

- The business's intended purpose is the creation of collaborations. It would be interesting to know how these collaborations will evolve during this time and how they experience the CI's business. Related to this are also different legal aspects and social aspects of the collaborations themselves.

- On an overall regional level this idea might over time influence the behaviour of organisations based in the western part of Sweden.

- Also different MNC:s might have an opinion about the CI's business and their interest could of importance for the CI's business.

- The selected stakeholders in this thesis have different competence related problems that varies in complexity and the organisations themselves vary in size.

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10. Appendix

10.1. Interviewed organisations

1. Högskolan Trollhättan/Uddevalla. Interview with Per Nylén 2003-10-07. He is working with sustainable production processes in the manufacturing industry and responsible for setting up a competence centre in these issues. The special fields are informatics, applied mathematics, production technology, materials technology and mecatronics. In only four years a research group of international standard has been created. The group has close collaboration with industry and other research bodies for example Volvo Aero Corporation. The group has a good network between KTH, CTH, LTU and several international contacts.
   http://www.htu.se/extra/page/? target=english

2. MACH (Material analysis at Chalmers): Interview 2003-10-08with Johan Angenete, coordinator for the centre and Eva Olsson, Director. The centre is an interdisciplinary centre within Chalmers University of Technology. The aim for the centre is to coordinate material analysis competence and equipment available at Chalmers. A vide range of analytical tools and personnel is available since the centre reaches over the Physics and Engineering Physics, the Mechanical Engineering and Chemical and Biological Engineering schools at Chalmers.
   http://fy.chalmers.se/~angenete/

3. Industrial Research and Development Corporation (IVF): Interview with 2003-10-13 with Elisabeth Sagström, Head of department for process development and Anna-Karin Jönbrink, Marketing responsible. IVF assists companies with industry related research and development by means of direct custom projects, joint R&D projects with other companies operating in the same or similar fields and links through various sector networks. IVF has a staff of about 160 scientists, engineers and support personnel. IVF work with companies, universities, industry organisations and other industrial research institutes, both nationally and internationally.
   http://www.ivf.se/uk_rootweb/

4. West Sweden Chamber of Commerce and Industry: Interview 2003-10-13 with Joacim Carlson responsible for business relations in the region of Gothenburg. The task of the West Sweden Chamber of Commerce and Industry (CCI) is to promote the interests of trade and industry in Western Sweden. CCI focuses on primarily two areas to improve in the region: infrastructure and education. Important is also the focus on business related services to the approx. 2 300 members and supplying a network to the member organisations.
   http://www.handelskammaren.net

5. NetGroup Engineering: Interview with Tommy Berg VD and xx 2003-10-14. The organisation was created in 1999 and consists today of 7 engineering companies specialized in providing solutions to the vehicle industry. Through its network

members the organisations can mobilize approx. 450 engineers. http://www.netgroup.se/index_eng.htm

6. Flextronics Design: Interview 2003-10-21 with Rune Lund, Manager Embedded Systems and Vice Head of Operations. Flextronics Design is a global engineering company product development or for a specific contract design service. The company provide a multitude of support services including compliance and regulatory testing, production test system development, DFX consulting, prototypes, and new product introduction.
   http://www.flextronics.com/Design/default.asp

7. Invest in Sweden Agency (ISA). Interview 2003-10-27 with Börje Svanborg, Head of Regional Cooperation & Development. ISA is a government agency responsible for informing foreign investors about business opportunities in Sweden. Companies planning to establish or expand business operations in Sweden can obtain information and assistance from ISA and its regional and international network. ISA has international operations in London, New York, Beijing, Shanghai and Tokyo and representation in Denmark, Finland, Germany, Italy, the Netherlands, South Korea, Taiwan and Los Angeles.
   http://www.isa.se/templates/Startpage____2008.aspx

8. IFP SICOMP: Interview 2003-10-23 with Leif Asp head of department for composite. The organisation is a research and technology organisation that serves the international industry in the areas of fibrous, composite and polymer materials. IFP SICOMP supplies research and development. Various forms of collaboration for the short and long term with one or several companies, testing, consultation and education.
   www.ifpsicomp.se

9. Networking companies: Interview with Lena Skarsjö 2003-10-02. This network was started in 1995 and consists of a total of 40 organisations within the public and private sector in the region called Fyrstad. The organisations within the network are mostly companies working as suppliers to the vehicle industry.
   www.networkingcompanies.se

10. Oxeon: Interview with Anders Carlsson, Business development, 2003-10-21. Oxeon develops, produces and markets patented tapewoven carbon reinforcements to international producers of composites with high demands on surface smoothness, weight reductions and design.
    www.oxeon.se

10.2. Workshops

Worshop with Jan Maier, Innoveas (www.innoveas.com) and Martin Börjesson, Fluidminds: 2003-09-16.

Worskhop during TCI-conference on regional development and cluster. In Gothenburg at Svenska Mässan: 2003-09-17.

Workshop with Jan Maier, Innoveas and Martin Börjesson, Fluidminds: 2003-10-30.

Workshop with Jan Maier, Innoves and Martin Börjesson, Fluidminds: 2003-11-07.

10.3. Secondary material from other group

Interviews conducted by: Signe Pedersen, Märta Lundström and Pernilla Scholin. Masterstudents, Autumn 2003: Department of informatics, Göteborgs Unbiversity.

Vadsbo, 2003-09-22
Imego, 2003-09-19
Volvo IT, 2003-11-06

10.3. Interview guide

The following interview guide was used during the interviews. Before the interview the respondents had received a description of the organisational idea. This description was then the starting point for discussing different aspects of the idea.

What is your immediate reflections when you here about this idea?

- General need for an organisation of this kind
- Different relationships
- Necessary factors for success
- Trust

- Transferral of competence to a competence system
- Creation and updating of profiles
- Selection of organisations to the system
- Selection of organisations in the business process

Who should own and manage an organisation like this?

- Objectivity
- Criteria for payment of service
- Internal competences

- Limits of responsibility; alliances etc.
- Information on business deals
- Criteria for using the CI

10.3. Description of CI to respondents

Ökad offertkraft
Projektet ska förbättra regionala företags offertverksamhet vilket resulterar i fler arbetstillfällen och ökade intäkter. Bakgrunden till projektet är: Företag inom Västsverige skickar dagligen ut offerter till olika multinationella företag eller erhåller information om produktutveckling hos dessa. För att öka den andel offerter som vinns ska samarbete mellan företag, högskoleinstitutioner och institut med tillräckligt högt förädlingsvärde inom i första hand Västsverige stimuleras.

Detta sker genom att en organisation bildas som arbetar för att sammanföra företag och högskola som har den kompetens som är aktuell för en viss offertförfrågan. Denna offertorganisation innehåller två delar:

- en organisatorisk struktur.
- ett kompetenssystem innehållande information om kompetens och centrala materiella resurser från utvalda företag, institut och institutioner inom högskolan.

Offertorganisationen tar in information om offertförfrågningar och affärsmöjligheter på två sätt: via organisationer som kommer till offertorganisationen och ber om hjälp, eller via uppsökande verksamhet som offertorganisationen själv bedriver.

Via en sökning i kompetenssystemet kan företag och institutioner som har den rätta kompetensen lokaliseras. Av de träffar som kommer upp i kompetenssystemet (cirka 10 – 15) väljs en handfull organisationer ut och bjuds in för att forma ett anbudsförfarande. På detta möte kan de utvalda organisationerna sedan formulera en offert och förhoppningsvis skapa grunden till en allians/samarbete för framtagande av den produkt som efterfrågas.